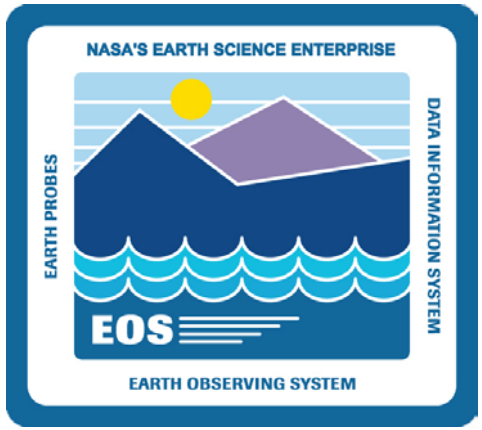


DATA DISTRIBUTION

EMD Training

Overview of Lesson

- Introduction
- Distribution Concepts
- Logging in to ECS Hosts
- Launching the Data Distribution Operator and Storage Management Control GUIs
- Monitoring/Controlling Distribution Requests
- Modifying Preambles
- Configuring Storage Management Polling and Deleting Files from Cache
- Monitoring Storage Management Server Operations

Overview of Lesson (Cont.)

- Launching the Order Manager GUI
- Monitoring/Controlling Order Manager Operations
- Using the OMS Configuration Script (OMS CI)
- Tuning Data Server Subsystem Parameters
- Troubleshooting DDIST and Order Manager GUI Problems
- PDS Operations
- Starting Up PDS
- Shutting Down PDS
- Monitoring/Controlling Product Processing Using PDS

Overview of Lesson (Cont.)

- **Monitoring/Controlling Order Processing Using the PDSIS OI**
- **Using the PDS and PDSIS Cleanup Managers**
- **Troubleshooting PDS Problems**
- **Practical Exercise**

Objectives

- **OVERALL:**
  - Develop proficiency in the procedures that apply to data distribution operations
- **SPECIFIC:**
  - Describe the general functions and processes associated with data distribution
    - » In the context of ECS DDIST, PDS, and OM GUI operations
  - Perform the steps involved in...
    - » logging in to ECS hosts
    - » launching the Data Distribution Operator and Storage Management Control GUIs
    - » monitoring/controlling data distribution requests
    - » modifying an e-mail preamble
    - » configuring Storage Management polling functions

Objectives (Cont.)

- **SPECIFIC (Cont.):**
  - **Perform the steps involved in...**
    - » **deleting files from cache**
    - » **viewing Storage Management Event Log information**
    - » **monitoring Storage Management server operations**
    - » **launching the Order Manager (OM) GUI**
    - » **viewing open intervention information on the OM GUI**
    - » **responding to an open intervention using the OM GUI**
    - » **monitoring and controlling distribution requests on the OM GUI**
    - » **changing the priority of a distribution request using the OM GUI**
    - » **suspending, resuming, canceling, or resubmitting a distribution request using the OM GUI**
    - » **editing ftp push parameters**

Objectives (Cont.)

- **SPECIFIC (Cont.):**
  - **Perform the steps involved in...**
    - » **viewing operator alerts on the OM GUI**
    - » **viewing a completed intervention using the OM GUI**
    - » **viewing and responding to suspended ftp push distribution destinations using the OM GUI**
    - » **checking and modifying OM queue status using the OM GUI**
    - » **checking staging status**
    - » **checking and modifying OM configuration parameters**
    - » **adding a destination to the frequently used destinations list**
    - » **viewing the OM GUI log**
    - » **preparing an input file for use with the OMS CI**

Objectives (Cont.)

- **SPECIFIC (Cont.):**
  - **Perform the steps involved in...**
    - » **processing an input file specified for Synergy III exceptions**
    - » **configuring how long order-tracking information is kept in the OMS database**
    - » **switching between Synergy IV and Synergy III operations**
    - » **modifying system parameters in database tables**
    - » **troubleshooting DDIST problems**
    - » **troubleshooting Order Manager GUI problems**
    - » **starting up PDS**
    - » **shutting down PDS**
    - » **monitoring/controlling product processing using PDS**

Objectives (Cont.)

- **SPECIFIC (Cont.):**
  - **Perform the steps involved in...**
    - » **monitoring/controlling order processing using the PDSIS OI**
    - » **troubleshooting PDS problems**

Objectives (Cont.)

- **STANDARDS:**
  - **Lesson content (procedures in the lesson)**
  - **Mission Operation Procedures for the ECS Project (611-EMD-001)**

Distribution Concepts

- **ECS Context**
  - **Data distribution for ECS is accomplished at the Distributed Active Archive Centers (DAACs)**
  - **People involved in data distribution activities are Distribution Technicians**
  - **Order Manager Subsystem (OMS) manages all the orders for data arriving via…**
    - » **V0 Gateway (GTWAY)**
    - » **Machine-to-Machine Gateway**
    - » **Data Pool Web Access GUI**
    - » **Spatial Subscription Server (NSBRV)**

Distribution Concepts

- **ECS Context (Cont.)**
  - **OMS performs validation of the orders it receives and dispatches each validated request to the appropriate ECS order-fulfillment service:**
    - » **Science Data Server (SDSRV) in the Data Server Subsystem (DSS)**
    - » **Product Distribution System (PDS)**
    - » **ftp daemon**
  - **Data Server Subsystem (DSS), which manages access to the data archive, is key to data distribution as well as several other functions**

Distribution Concepts

- **ECS Context (Cont.)**
  - **Product Distribution System (PDS) supports the distribution of data on the following types of media:**
    - » **8mm tape cartridges**
    - » **Digital Linear Tape (DLT)**
    - » **Compact disk (CD)**
    - » **DVD (formerly “digital video disk” or “digital versatile disk” now referred to as just "DVD")**

Distribution Concepts (Cont.)

- **ECS Context (Cont.)**
  - **OMS is the subsystem within ECS that validates orders from users and dispatches validated requests to the ECS order-fulfillment services**
    - » **Receives orders from the V0 Gateway (GTWAY), Machine-to-Machine Gateway, Data Pool Web Access GUI, or the Spatial Subscription Server (NSBRV)**
    - » **Performs validation of orders and creates "interventions" for invalid orders (puts the orders on hold)**
    - » **Dispatches each validated request to the appropriate ECS order-fulfillment service; e.g., PDS, SDSRV, or ftp daemon**

Distribution Concepts (Cont.)

- **ECS Context (Cont.)**
  - **Computer software configuration items (CSCIs) in DSS**
    - » **DDIST**
    - » **STMGT**
    - » **SDSRV**
  - **Computer software elements in PDS**
    - » **Product Distribution System Interface Server (PDSIS)**
    - » **Product Distribution System Stand-Alone (PDSSA)**

Distribution Concepts (Cont.)

- **ECS Context (Cont.)**
  - **DDIST CSCI formats and distributes data to users**
    - » **Accepts requests from the SDSRV CSCI**
    - » **Directs the STMGT CSCI to transfer data**
  - **STMGT CSCI stores, manages, and retrieves data files on behalf of other science data processing components**
    - » **Provides interfaces that allow Data Distribution to obtain access to disk space**
    - » **Provides for the copying of files into the archive for permanent storage**

Distribution Concepts (Cont.)

- **ECS Context (Cont.)**
  - **SDSRV CSCI manages and provides user access to collections of non-document Earth Science data**
    - » **Checks/verifies metadata**
    - » **Issues requests to the STMGT and DDIST CSCIs to perform storage and distribution services in support of the processing of service requests, such as insertion of data into the archive or distribution of data products from the archive**

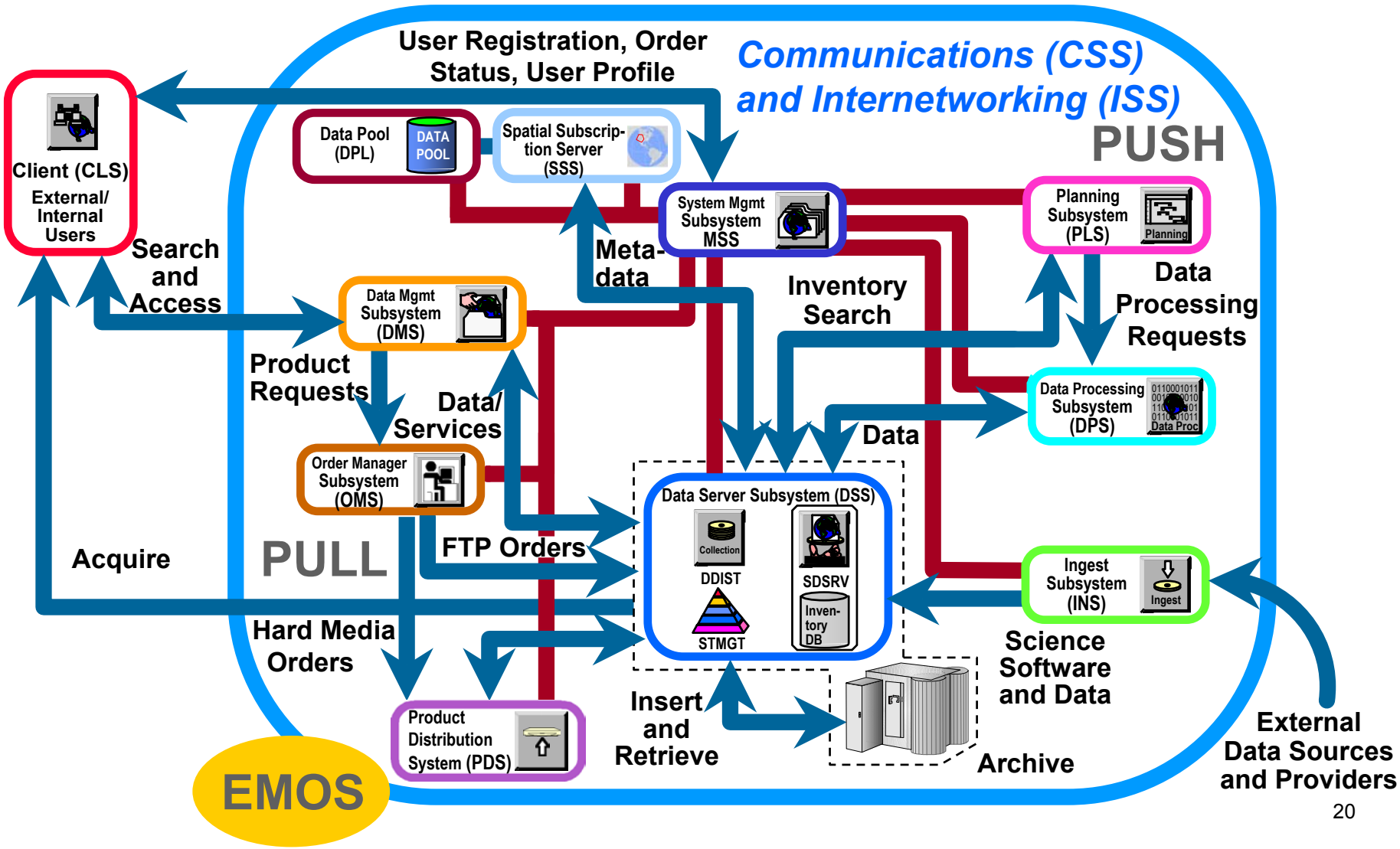
Distribution Concepts (Cont.)

- **ECS Context (Cont.)**
  - **PDSIS (PDS element that provides the interface between ECS and the PDSSA)**
    - » **Accepts multiple digital product requests via Version 0 Gateway (V0GW) Object Description Language (ODL) files that are forwarded to PDSIS by the Order Manager Server**
    - » **Requests digital product data that are not in the Data Pool from ECS in product request parameter files that are sent via the Science Data Server (SDSRV) Command Line Interface (SCLI)**
    - » **Receives digital product data from ECS via ftp push**
    - » **Coordinates PDSSA processing to include detection and resolution of data transfer problems, data flow control, and order recovery**
    - » **Generates packaging and shipping artifacts (packing lists, shipping labels, e-mail distribution notices)**

Distribution Concepts (Cont.)

- ECS Context (Cont.)
  - PDSSA (PDS element that transfers digital products to physical media)
    - » Acquires digital products from either PDS disks or Data Pool disks, resolves and detects transfer problems, and re-pulls data
    - » Transfers digital products to physical media (e.g., CD-ROM, DVD-ROM, High-density 8mm tape, DLT 7000c
    - » Prints labels and inserts (e.g., tape labels, CD-ROM and DVD-ROM labels (printed on the disks), jewel-case inserts
    - » Removes digital source files upon completion of a media product
    - » Supports management of PDSSA data, job status, and reports
    - » Supports management of PDSSA operations through operator interfaces

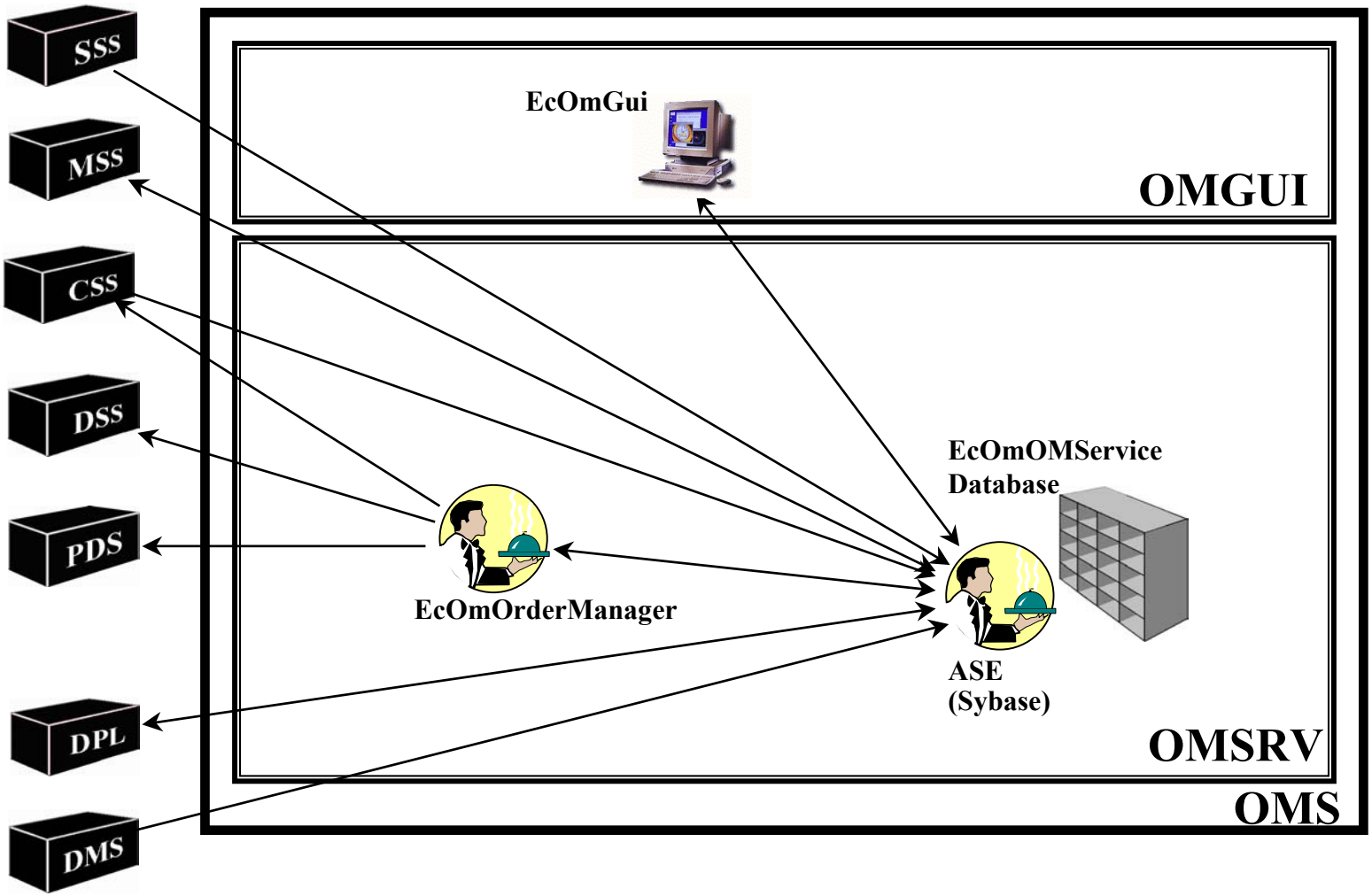
ECS Context Diagram



Distribution Concepts (Cont.)

- **OMS**
  - **Order Manager Server (EcOmOrderManager)**
  - **Sybase Adaptive Server Enterprise (ASE) Server**
  - **Order Manager GUI (EcOmGUI)**
- **Order Manager GUI Start-Up**
  - **Web-based GUI – uses a web browser (e.g., Netscape)**

Order Manager Subsystem: Architecture and Interfaces



Distribution Concepts (Cont.)

- OMS (Cont.)
  - Examples of scripts that implement the Order Manager GUI (/usr/ecs/MODE/CUSTOM/WWW/OMS/cgi-bin directory on the Data Pool Server host) (not normally invoked directly by Distribution Technicians)
    - » EcOmGuiAgingConfig.pl
    - » EcOmGuiCompletedInterv.pl
    - » EcOmGuiConfigureFtpPushDetail.pl
    - » EcOmGuiDistributionRequestDetail.pl
    - » EcOmGuiEcsOrder.pl
    - » EcOmGuiFtpPushDestinationsDetail.pl
    - » EcOmGuiHome.pl
    - » EcOmGuiMediaConfig.pl
    - » EcOmGuiOpenIntervDetail.pl
    - » EcOmGuiServerStatistics.pl

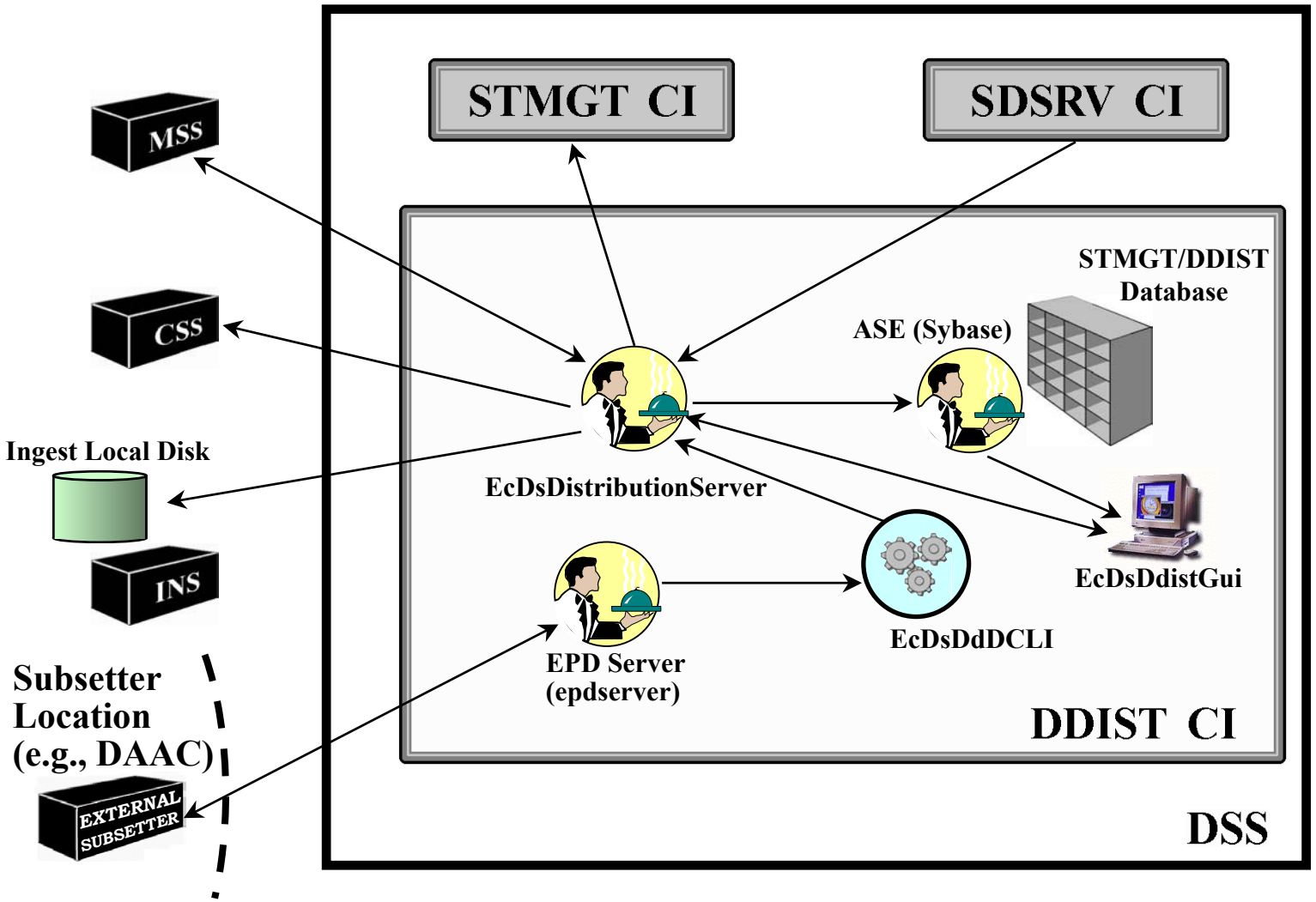
Distribution Concepts (Cont.)

- **OMS (Cont.)**
  - **Distribution personnel start the OMS Command Line Interface (OMS CI) using following start-up script that is available in the /usr/ecs/MODE/CUSTOM/WWW/OMS/cgi-bin directory on the Data Pool Server host**
    - » **EcOmConfig.pl**

Distribution Concepts (Cont.)

- **DDIST**
  - **Data Distribution Operator GUI (EcDsDdistGui)**
  - **Distribution Server (EcDsDistributionServer)**
  - **Sybase Adaptive Server Enterprise (ASE) Server**
  - **External Product Dispatcher (EPD)**
  - **DDIST Command Line Interface (DCLI)**

Data Server Subsystem: DDIST Architecture and Interfaces



Distribution Concepts (Cont.)

- DDIST (Cont.)
  - Start-up script used by Distribution Technicians (/usr/ecs/MODE/CUSTOM/utilities directory on the Operations Workstation)
    - » EcDsDdistGuiStart
  - Start-up scripts called by other applications (not normally invoked directly by Distribution Technicians)
    - » EcDsDataDistributionAppStart
    - » EcDsDdStart
    - » EcDsDistributionServerStart
  - Other scripts
    - » DsDdSendMailPl.pl
    - » EcDsDdPTEdit.pl [obsolete]

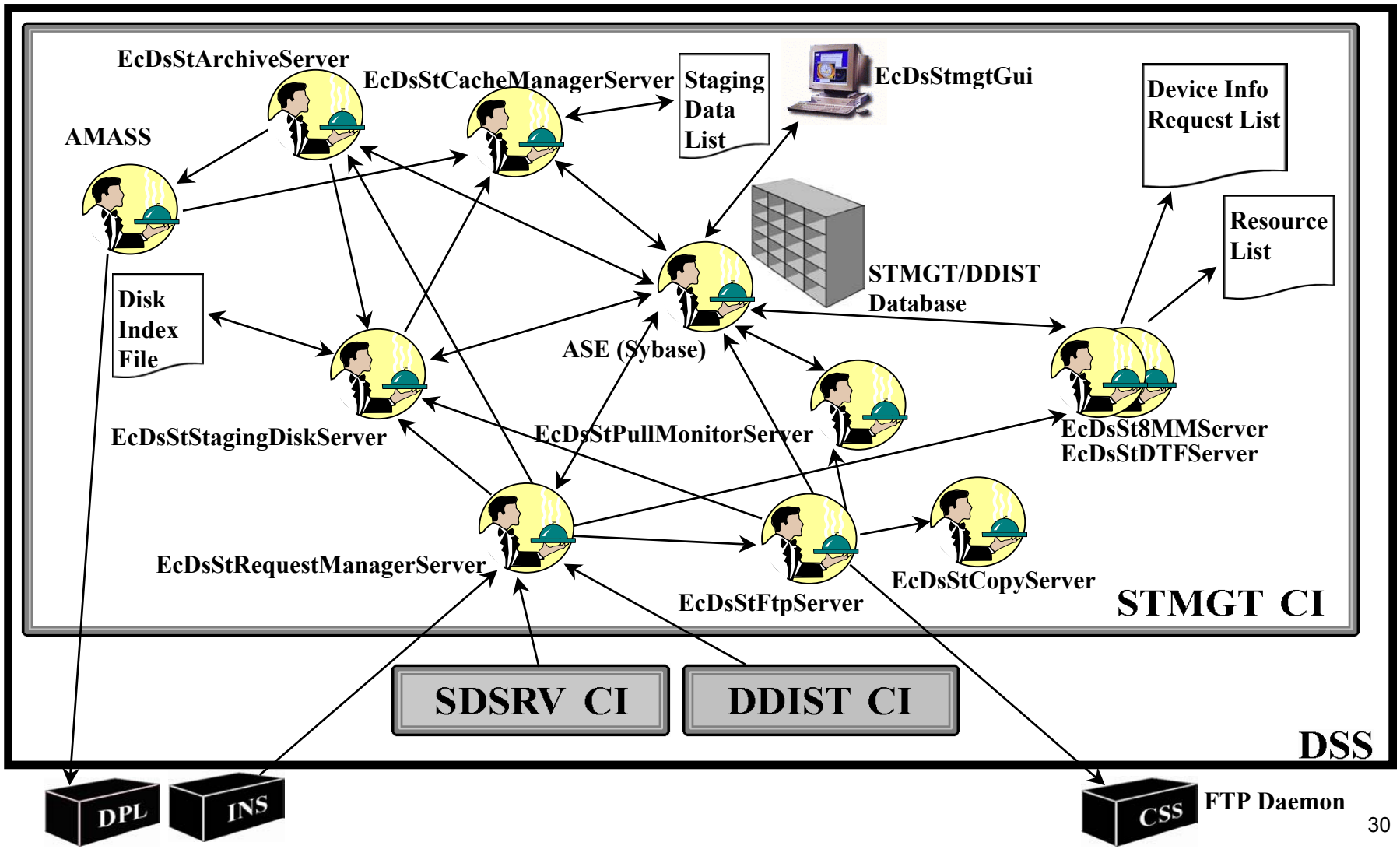
Distribution Concepts (Cont.)

- **STMGT**
  - **Archive Server (EcDsStArchiveServer)**
  - **Staging Servers**
    - » **Cache Manager Server (EcDsStCacheManagerServer)**
    - » **Pull Monitor (EcDsStPullMonitorServer) [symbolic link to the Cache Manager Server]**
    - » **Staging Disk Server (EcDsStStagingDiskServer)**
  - **Resource Managers**
    - » **8mm Server (EcDsSt8MMServer)**
    - » **DTF-2 Server (EcDsStDTFServer)**
    - » **FTP Server (EcDsStFtpServer)**
    - » **Copy Server (EcDsStCopyServer)**
  - **Storage Management Request Manager (EcDsStRequestManagerServer)**
  - **Storage Management Control GUI (EcDsStmgtGui)**

Distribution Concepts (Cont.)

- **STMGT (Cont.)**
  - **Sybase ASE Server**
  - **Archival Management and Storage System (AMASS)**

Data Server Subsystem: STMGT Architecture and Interfaces



Distribution Concepts (Cont.)

- **STMGT (Cont.)**
  - **Start-up script used by Distribution Technicians (/usr/ecs/*MODE*/CUSTOM/utilities directory on the Operations Workstation)**
    - » **EcDsStmgtGuiStart**

Distribution Concepts (Cont.)

- **STMGT (Cont.)**
  - **Start-up scripts called by other applications (not normally invoked directly by Distribution personnel)**
    - » **EcDsStFtpServerStart**
    - » **EcDsStStagingDiskServerStart**
    - » **EcDsStStart**
    - » **EcDsStStorageMgmtAppStart**
    - » **EcDsStArchiveServerStart**
    - » **EcDsStCacheManagerServerStart**
    - » **EcDsStRequestManagerServerStart**
    - » **EcDsSt8MMServerStart**
    - » **EcDsStDLTServerStart**
    - » **EcDsStCDROMServerStart**

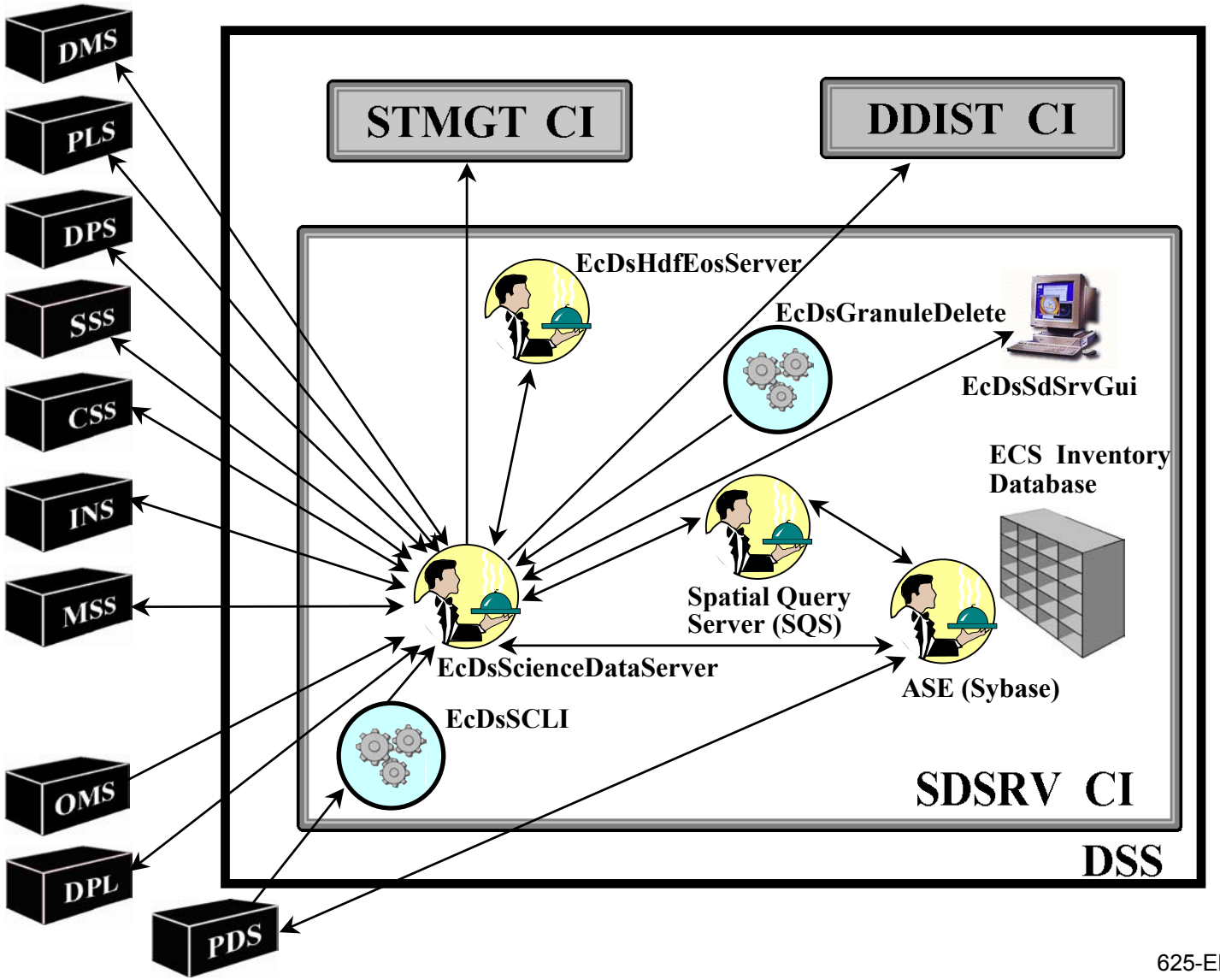
Distribution Concepts (Cont.)

- **STMGT (Cont.)**
  - **Other scripts**
    - » **EcDsCheckArchive**
    - » **EcDsStConfigVolGrps**
    - » **EcDsStDbBuild**
    - » **EcDsStDbDrop**
    - » **EcDsStDbDump**
    - » **EcDsStDbDumpTrans**
    - » **EcDsStDbLoad**
    - » **EcDsStDbLoadTrans**
    - » **EcDsStDbPatch**
    - » **EcDsStFilesPerTapeUtility**
    - » **EcDsStVolGrpCreateMain.pl**

Distribution Concepts (Cont.)

- **SDSRV**
  - **Among the services that SDSRV provides to other parts of the ECS is searching the inventory database to determine whether particular granules are available in the archive**
    - » **For example, the Machine-to-Machine Gateway does searches through the Science Data Server even when it places its orders through the OMS instead of the SDSRV**
    - » **That means the Science Data Server must be running in order for the Machine-to-Machine Gateway to operate correctly whether the Machine-to-Machine Gateway is configured to submit its orders to the OMS or SDSRV**

Data Server Subsystem: SDSRV Architecture and Interfaces



Distribution Concepts (Cont.)

- **SDSRV (Cont.)**
  - Science Data Server (EcDsScienceDataServer)
  - Hierarchical Data Format (HDF) EOS Server (EcDsHdfEosServer)
  - Granule Deletion Administration Tool (EcDsGranuleDelete)
  - Science Data Server GUI (EcDsSdSrvGui)
  - Science Data Server (SDSRV) Command Line Interface (SCLI) (EcDsSCLI)
  - Autometric Spatial Query Server (SQS)
  - Sybase ASE Server

Distribution Concepts (Cont.)

- **SDSRV (Cont.)**
  - **Start-up script (/usr/ecs/*MODE*/CUSTOM/utilities directory on the Operations Workstation)**
    - » **EcDsSdSrvGuiStart**

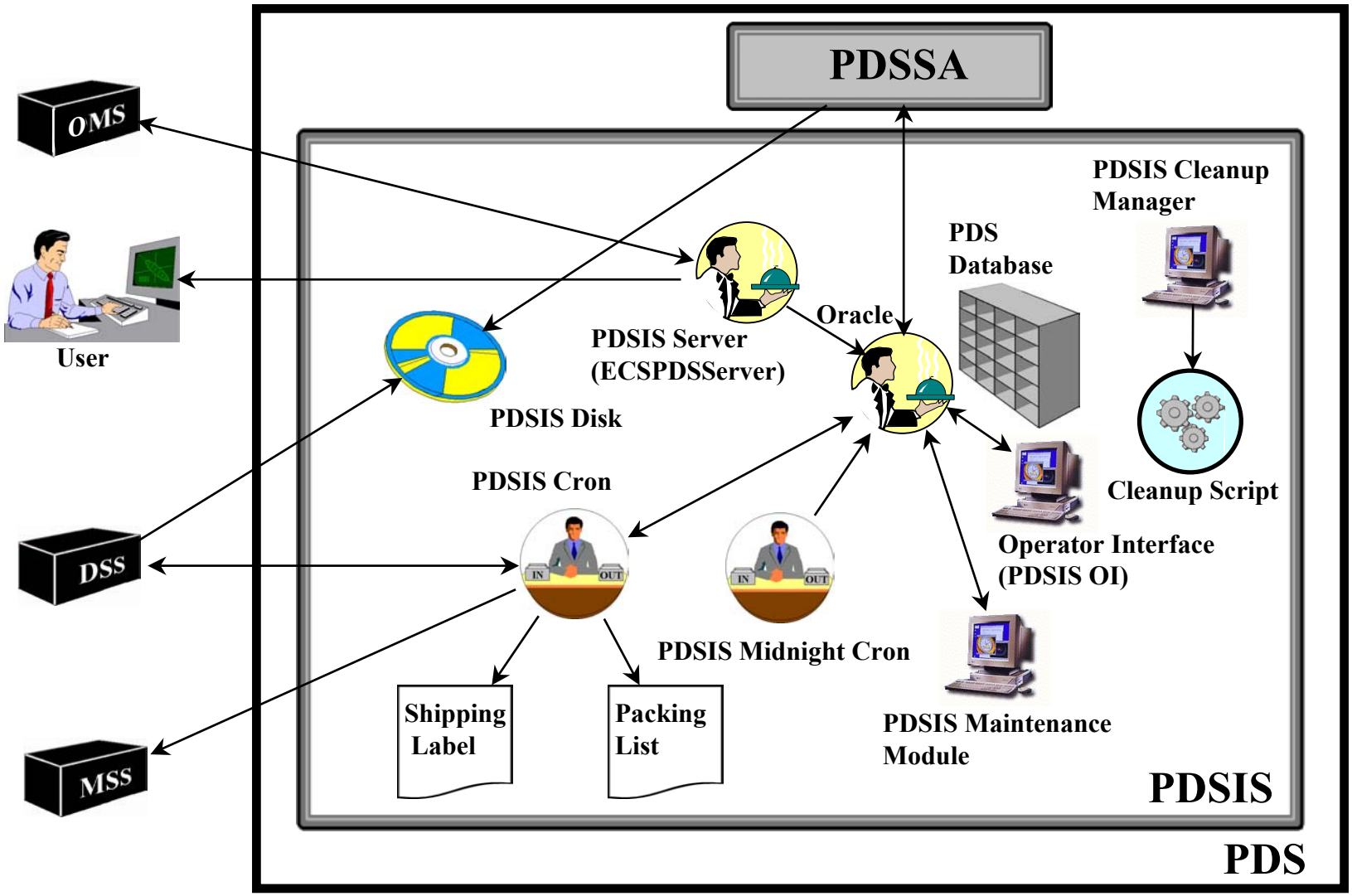
Distribution Concepts (Cont.)

- SDSRV (Cont.)
  - Other scripts
    - » EcTsDsClientDriverStart
    - » EcDsSrConvertEvt
    - » EcDsSrDbBuild
    - » EcDsSrDbDrop
    - » EcDsSrDbDump
    - » EcDsSrDbLoad
    - » EcDsSrDbMigrate
    - » EcDsSrDbPatch
    - » EcDsSrDbValids

Distribution Concepts (Cont.)

- **PDSIS**
  - **PDSIS Operator Interface (PDSIS OI)**
  - **PDSIS Maintenance Module**
  - **PDSIS Server (ECSPDSServer)**
  - **PDSIS Cron**
  - **PDSIS Midnight Cron**
  - **PDSIS Cleanup Manager**
  - **Cleanup Script**
  - **Oracle Database Server**

Product Distribution System: PDSIS Architecture and Interfaces



Distribution Concepts (Cont.)

- **PDSIS (Cont.)**
  - **Aliases available when logging in to the PDS Server host using either a PDS user ID (e.g., pds, pds_st, or pds_it) or a PDSIS user ID (e.g., pdsis, pdsis_ts1, or pdsis_ts2):**
    - » **pdsisoi**
    - » **pdsismaint**
  - **Aliases may vary somewhat depending on the site set-up**

Distribution Concepts (Cont.)

- **PDSIS (Cont.)**
  - **Alternatively, the following start-up scripts are available in the "run" subdirectory of the PDS root directory (i.e., /usr/local/pds/run, /usr/local/pds_st/run, or /usr/local/pds_it/run depending on whether OPS-, TS1-, or TS2-mode processing is being accomplished) on the PDS Server host:**
    - » **pdsisoi_*mode*.sh, (e.g., pdsisoi.sh, pdsisoi_st.sh, or pdsisoi_it.sh, depending on whether OPS-, TS1-, or TS2-mode processing is being accomplished)**
    - » **pdsismaint_*mode*.sh (e.g., pdsismaint.sh, pdsismaint_st.sh, or pdsismaint_it.sh, depending on whether OPS-, TS1-, or TS2-mode processing is being accomplished)**
  - **Script names may vary somewhat depending on the site set-up**

Distribution Concepts (Cont.)

- **PDSIS (Cont.)**
  - **Scripts available in the /usr/local/pdsis_mode/utilities directory (i.e., /usr/local/pdsis/utilities, /usr/local/pdsis_ts1/utilities, or /usr/local/pdsis_ts2/utilities) on the PDS Server host:**
    - » **EcPdPDSISServerStart**
    - » **EcPdIsPdsisCleanup**
    - » **EcPdPDSISResetOrder**

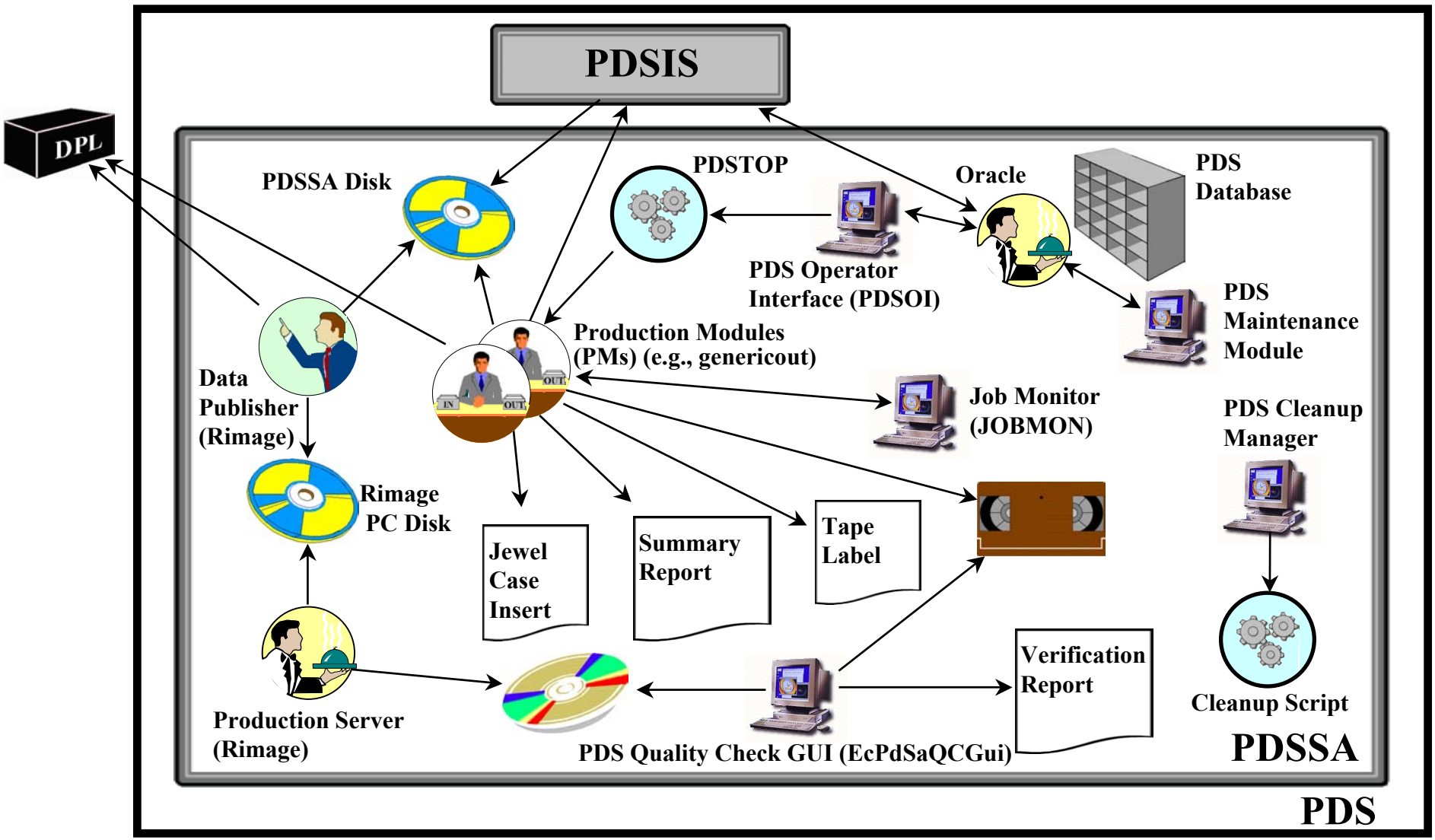
Distribution Concepts (Cont.)

- **PDSIS (Cont.)**
  - **Start-up scripts available (but not normally invoked directly by distribution personnel) in the /usr/local/pdsis_mode/utilities directory (i.e., /usr/local/pdsis/utilities, /usr/local/pdsis_ts1/utilities, or /usr/local/pdsis_ts2/utilities) on the PDS Server host [typically called by other applications (especially cron)]:**
    - **EcPdPDSISCronStart**
    - **EcPdPDSISMidnightCronStart**
    - **EcPdIsPdsisActivator**
    - **EcPdIsStartActivateCron**

Distribution Concepts (Cont.)

- **PDSSA**
  - **PDS Operator Interface (PDSOI)**
  - **PDS Job Monitor (JOBMON)**
  - **PDS Quality Check GUI (EcPdSaQCGui)**
  - **PDS Maintenance Module**
  - **PDSTOP (pdstop2.pl)**
  - **Production Modules (e.g., genericout, genericout2)**
  - **Rimage Data Publisher**
  - **Rimage Production Server**
  - **PDS Cleanup Manager**
  - **Cleanup Script**
  - **Oracle Database Server**

Product Distribution System: PDSSA Architecture and Interfaces



Distribution Concepts (Cont.)

- **PDSSA (Cont.)**
  - **Aliases available when logging in to the PDS Server host as a PDS user (i.e., pds, pds_st, or pds_it):**
    - » **pdsoi**
    - » **pdsmaint**
    - » **jobmon**
  - **Aliases may vary somewhat depending on the site set-up**

Distribution Concepts (Cont.)

- **PDSSA (Cont.)**
  - **Alternatively, the following start-up scripts are available in the "run" subdirectory of the PDS root directory (i.e., /usr/local/pds/run, /usr/local/pds_st/run, or /usr/local/pds_it/run) on the PDS Server host:**
    - » **pdsoi_*mode*.sh, (e.g., pdsoi.sh, pdsoi_st.sh, or pdsoi_it.sh, depending on whether OPS-, TS1-, or TS2-mode processing is being accomplished)**
    - » **pdsmaint_*mode*.sh (e.g., pdsmaint.sh, pdsmaint_st.sh, or pdsmaint_it.sh)**
    - » **jobmonitor**
    - » **pdscleanup**
  - **Script names may vary somewhat depending on the site set-up**

Distribution Concepts (Cont.)

- **PDSSA (Cont.)**
  - **Start-up script available in the "jobmon" subdirectory of the PDS root directory (i.e., /usr/local/pds/jobmon, /usr/local/pds_st/jobmon, or /usr/local/pds_it/jobmon) on the PDS Server host:**
    - » **jobmonitor**
  - **Start-up script available in the run/verify subdirectory of the PDS root directory (i.e., /usr/local/pds/run/verify, /usr/local/pds_st/run/verify, or /usr/local/pds_it/run/verify) on the PDS Server host:**
    - » **EcPdSaQCGui**

Distribution Concepts (Cont.)

- **PDSSA (Cont.)**
  - **Other applications in the "run" subdirectory of the PDS root directory (i.e., /usr/local/pds/run, /usr/local/pds_st/run, or /usr/local/pds_it/run) on the PDS Server host (not normally invoked directly by Distribution personnel)**
    - » **genericout**
    - » **genericout2**
    - » **l0out**
    - » **mkisofs**
    - » **pdstop2.pl**
    - » **xgettape_notae**
    - » **Scripts and production modules (e.g., demout, drgout, l1out, nlapsout) that are used in non-ECS implementations of PDS**

Distribution Concepts (Cont.)

- **Data Distribution is a process of retrieving archived data and providing the data to requesters in response to the orders they submit**
  - **external requesters**
  - **internal processes**
- **Data retrieved from the archives can be distributed to requesters using either of the following three general methods:**
  - **Electronic pull**
  - **Electronic push**
  - **Hard (physical) media distribution on disks or tape cartridges [distributed through the Product Distribution System (PDS)]**

Distribution Concepts (Cont.)

- **Method of data distribution is dictated by the nature of the data distribution request**
  - **Requester specifies the distribution method when ordering or subscribing to the data**

Distribution Concepts (Cont.)

- **Electronic Pull:**
  - Requester searches for a specific data product
  - Requester submits an order for a "pull" of the data using file transfer protocol (ftp)
  - OMS validates the request (e.g., determines whether the specified distribution medium is appropriate for the quantity of data)
  - OMS queues an insert action in the Data Pool database for each granule of a request that is not found to be on Data Pool disk
  - The Data Pool (DPL) queues a granule-staged action in the OMS database with status
    - » DPL notifies OMS when each granule has been staged
  - OMS builds and sends an e-mail notification to the requester stating that the order has been filled

Distribution Concepts (Cont.)

- **Electronic Pull (Cont.):**
  - **The requester pulls (transfers) the data by ftp from the Data Pool disk (from the location specified in the e-mail notification) to the requester's own system**
    - » **User directories have links to staged granules**

Distribution Concepts (Cont.)

- **Electronic Push:**
  - Requester searches for a specific data product
  - Requester submits an order for ftp “push” of the data
  - OMS validates the request
  - OMS queues an insert action in the Data Pool database for each granule of a request that is not found to be on Data Pool disk
  - Data Pool (DPL) queues a granule-staged action in the OMS database with status
    - » DPL notifies OMS when each granule has been staged
  - OMS requests the ftp daemon to ftp the granule(s) to the requester
  - OMS builds and sends an e-mail notification to the requester stating that the order has been filled

Distribution Concepts (Cont.)

- **Physical Media Distribution:**
  - Requester searches for a specific data product
  - Requester submits an order for shipment of data on a physical medium
  - If an order to be delivered on a physical medium is for a product other than a Landsat-7 product, the Order Manager Server forwards the order to the Product Distribution System (PDS)
  - For Landsat-7 products, the V0 Gateway first forwards the order to be delivered on a physical medium to the Distributed Ordering, Research, Reporting and Accounting Network (DORRAN) at the Earth Resources Observation Systems (EROS) Data Center (EDC); then when the gateway receives a validated Product Request from DORRAN, sends the Landsat-7 order to the Order Manager Server, which forwards the order to PDS

Distribution Concepts (Cont.)

- **Physical Media Distribution (Cont.):**
  - **If the data for an order have not been pre-staged to the Data Pool, the PDS orders the requested data from the ECS using the Science Data Server (SDSRV) Command Line Interface (SCLI)**
    - » **The PDS may break up large orders into smaller sets and may elect to order granules for a request individually**
  - **If the data for an order have not been pre-staged to the Data Pool, ECS delivers the data to the PDS using its standard ftp push data distribution capability**

Distribution Concepts (Cont.)

- **Physical Media Distribution (Cont.):**
  - **The PDS transfers the data from either the Data Pool or the PDS directories (as applicable) to the specified physical medium**
    - » **Metadata from the Data Pool are copied onto the physical medium in XML format (as .xml files)**
    - » **Metadata from the Science Data Server are copied onto the physical medium in ODL format (as .met files)**
  - **The PDS e-mails a data distribution notice (order shipment notification) to the user and (for Landsat-7 orders) to DORRAN**
  - **The PDS updates the ECS order-tracking database to completed status**

PDS (PDSIS) Order Management

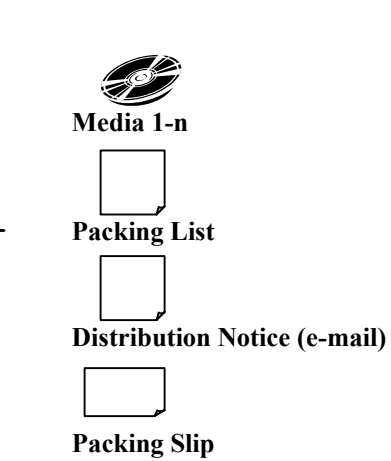
- **PDS Order Break-Down vs. ECS Order Break-Down**
  - **Disparities in the way the various elements are managed**
  - **Differences in the terminology that refers to the different elements**
    - » **ECS "orders" are composed of "requests" and requests consist of granules**
    - » **In PDS (i.e., PDSIS) each ECS "request" is converted to an "order" composed of "units" and a unit consists of one granule**

PDS (PDSIS) Order Management

- **PDS Order Break-Down vs. ECS Order Break-Down (Cont.)**
  - **ECS requests are grouped by media type**
    - » **If there is a problem with a request in an ECS order, it causes a problem with the entire order**
  - **In PDS if there is a problem with some of the units in an order, it is possible to ship a partial order (i.e., the customer receives the units that can be completed)**
    - » **Additional units in the order may be completed at a later time**

ECS to PDS Order Breakdown Structure

PDSIS Control		PDSSA Control
ECS Order #		
Request_ID_1 =>	PDS Order#_1	
Granule_1		Unit_1
Granule_2		Unit_2
Granule_3		Unit_3
Granule_4		Unit_4
Granule_5		Unit_5
Granule_6		Unit_6
Granule_7		Unit_7
Granule_n		Unit_n
...		...
Request_ID_2 =>	PDS Order#_2	
Granule_10		Unit_1
Granule_11		Unit_2
Granule_12		Unit_3
Granule_13		Unit_4



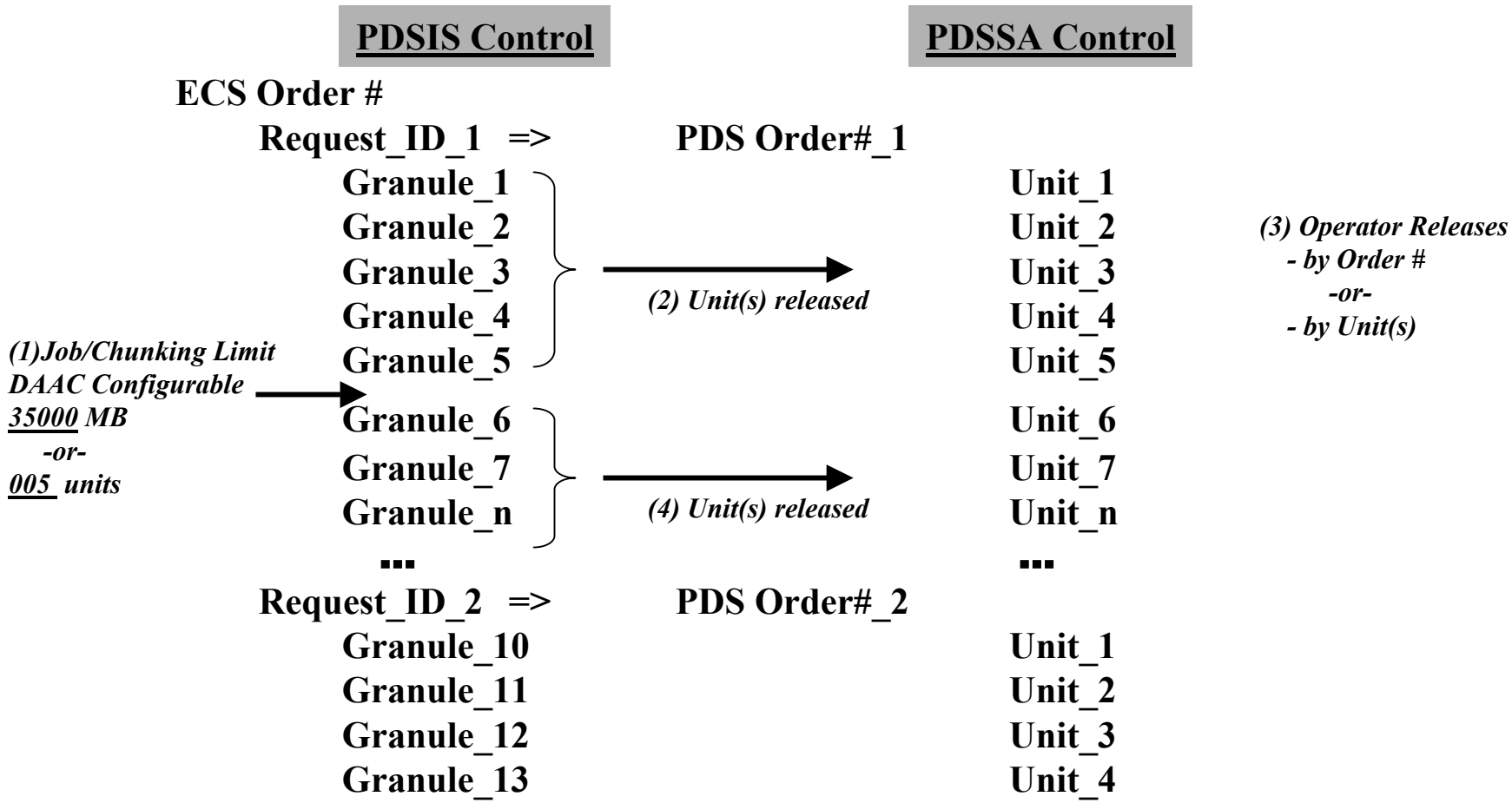
PDS (PDSIS) Order Management (Cont.)

- "Grouping" Methodology
  - Large orders (e.g., greater than 300GB) are managed by PDSIS via a "grouping" methodology
    - » Grouping affects both media creation and working space cleanup and release
  - There are two grouping factors, only one of which (as specified in one of the PDSIS database tables) is in effect at a time
    - » Granule size
    - » Group limits
  - The grouping factor is relevant only for orders that are larger than the value assigned to the current grouping factor
  - When PDSSA completes units, the disk space is made available for additional data from ECS

PDS (PDSIS) Order Management (Cont.)

- "Grouping" Methodology (Cont.)
  - Granule-size grouping:
    - » If the granule size limit is 35,000, an order for 600 megabytes of data would not be broken up into chunks because it is smaller than the granule size limit
    - » When the size of an order (e.g., 45,000 megabytes) is greater than the size limit, PDSIS makes a chunk of data available to PDSSA after the amount of data received from ECS reaches the size limit (35,000 megabytes)
  - Group-limits grouping:
    - » PDSIS makes a chunk of an order available to PDSSA when the number of units specified in the database has been received from ECS
    - » If the value for the group limit is NULL, all units are made available to PDSSA only after all unit data have been staged by ECS

PDS Order Grouping



Logging in to ECS Hosts

- **Logging in to ECS hosts is accomplished from a UNIX command line prompt**
  - **It is an initial set of steps that is performed when accomplishing many other Data Distribution tasks**
- **Procedure**
  - **Access the command shell**
  - **Set the DISPLAY environmental variable**
  - **Log in to the specified host using secure shell and the specified user ID**

Launching Data Distribution and Storage Management GUIs

- **Software applications associated with Data Distribution**
  - **Data Distribution Operator GUI (EcDsDdistGui)**
  - **Distribution Server (EcDsDistributionServer)**
  - **Sybase ASE Server**
- **Data Distribution depends on a number of related servers, especially…**
  - **Science Data Server servers**
  - **Storage Management servers**

Launching Data Distribution and Storage Management GUIs (Cont.)

- **Software applications associated with Storage Management**
  - **Storage Management Control GUI (EcDsStmgtGui)**
  - **Archive Server (EcDsStArchiveServer)**
  - **Cache Manager Server (EcDsStCacheManagerServer)**
  - **Pull Monitor (EcDsStPullMonitorServer)**
  - **Staging Disk Server (EcDsStStagingDiskServer)**
  - **8mm Server (EcDsSt8MMServer)**
  - **FTP Server (EcDsStFtpServer)**
  - **Storage Management Request Manager (EcDsStRequestManagerServer)**

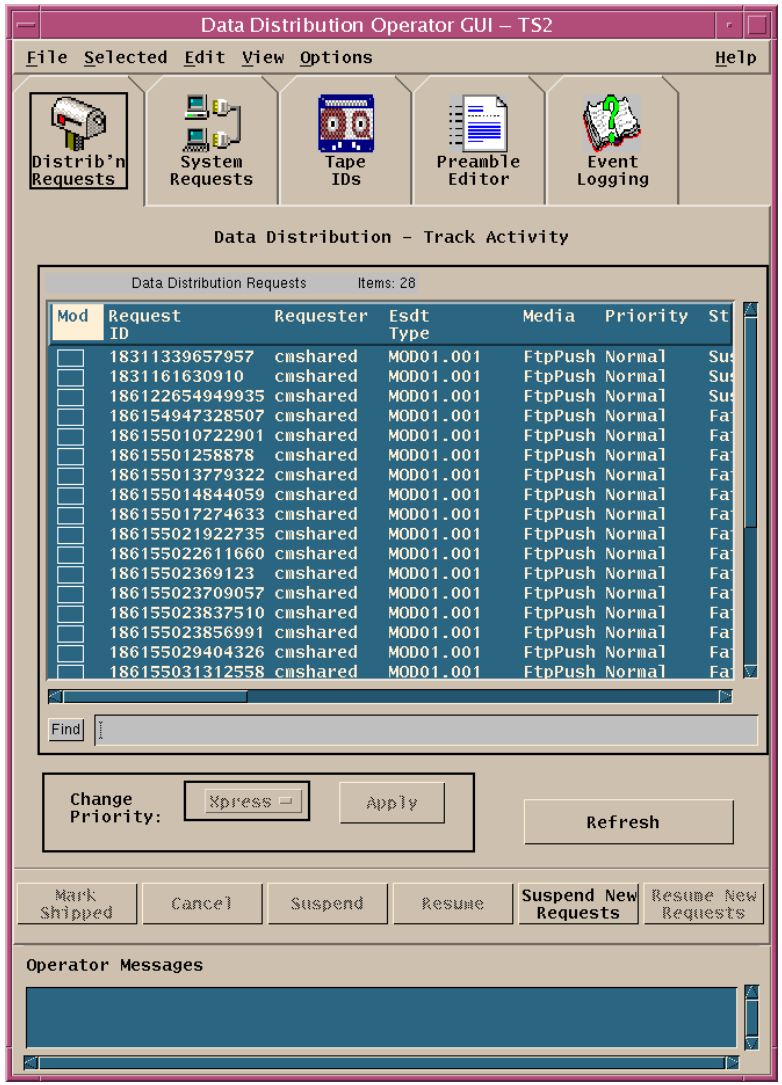
Launching Data Distribution and Storage Management GUIs (Cont.)

- **Software applications associated with Storage Management (Cont.)**
  - **Sybase ASE Server**
  - **Archival Management and Storage System (AMASS)**

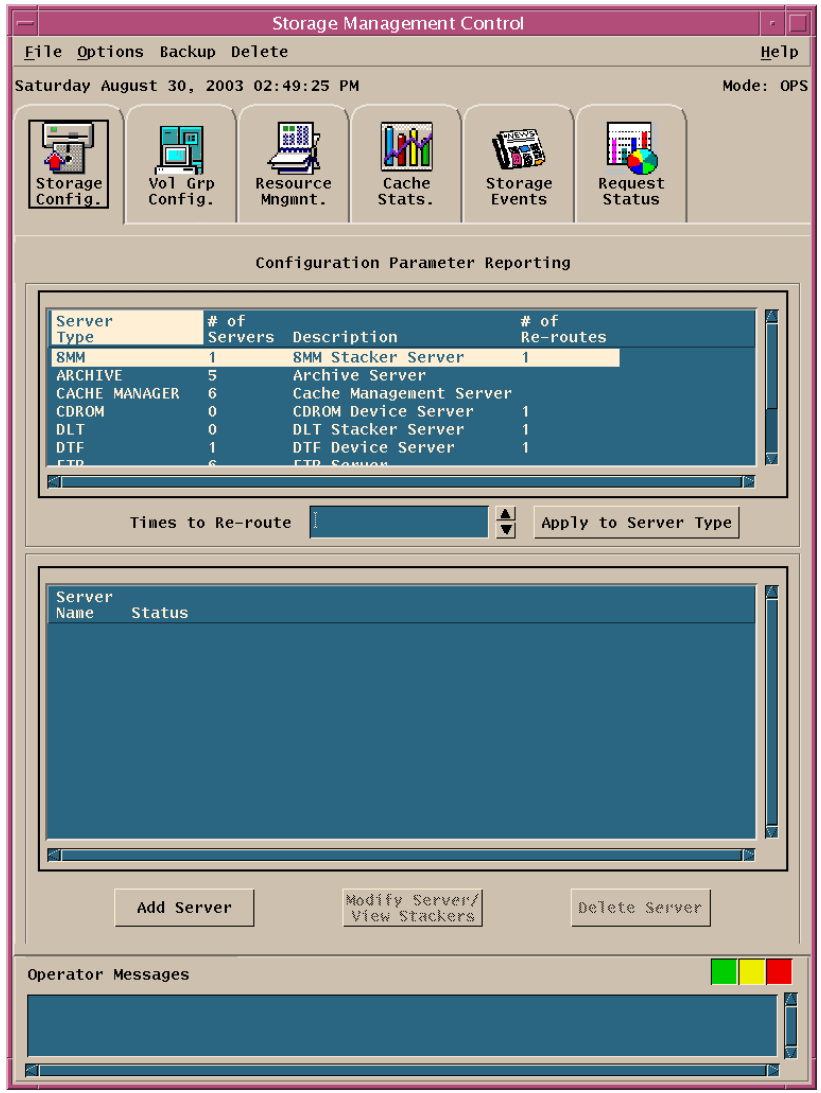
Launching Data Distribution and Storage Management GUIs (Cont.)

- Use UNIX command line to gain access to GUIs
- Procedure (Launching the Data Distribution Operator and Storage Management Control GUIs)
  - Access a terminal window logged in to the Operations Workstation
  - Change directory to the utilities directory
  - Enter the command to start the Data Distribution Operator GUI
  - Enter the command to start the Storage Management Control GUI

Data Distribution Operator GUI: Distrib'n Requests Tab



Storage Management Control GUI: Storage Config. Tab



Monitoring/Controlling Data Distribution Requests

- Data Distribution activities are monitored and controlled using….
  - Data Distribution Operator GUI
  - Storage Management Control GUI
- DAAC Distribution Technician monitors and manages data distribution requests primarily via the Data Distribution - Track Activity window of the Data Distribution Operator GUI

Monitoring/Controlling Data Distribution Requests (Cont.)

- From the Data Distribution - Track Activity window the DAAC Distribution Technician can perform the following functions:
  - View data distribution requests
  - Change the priority of a selected request
  - Cancel, suspend, or resume processing of a request
  - Filter on all or specific requests by...
    - » Request ID
    - » Requester
    - » Media Type
    - » State (current status)

Monitoring/Controlling Data Distribution Requests (Cont.)

- The Data Distribution - Track Activity window displays the following information (plus additional information) for each data distribution request:
  - Request ID
  - Requester
  - ESDT Type
  - Media type
  - Priority
  - State
  - Estimated # of Media
  - Total Size [of the request]
  - # of Files

Monitoring/Controlling Data Distribution Requests (Cont.)

- **Procedure**
  - Configure data distribution polling (subordinate procedure)
  - Observe data distribution request information displayed in the Data Distribution Requests list
  - Filter requests as necessary (subordinate procedure)
  - Change the priority of distribution requests (subordinate procedures)
  - Change the status of distribution requests (subordinate procedures)
    - » Suspend requests
    - » Resume processing of suspended requests
    - » Cancel requests
    - » View open interventions on the OM GUI
  - Troubleshoot distribution problems as necessary

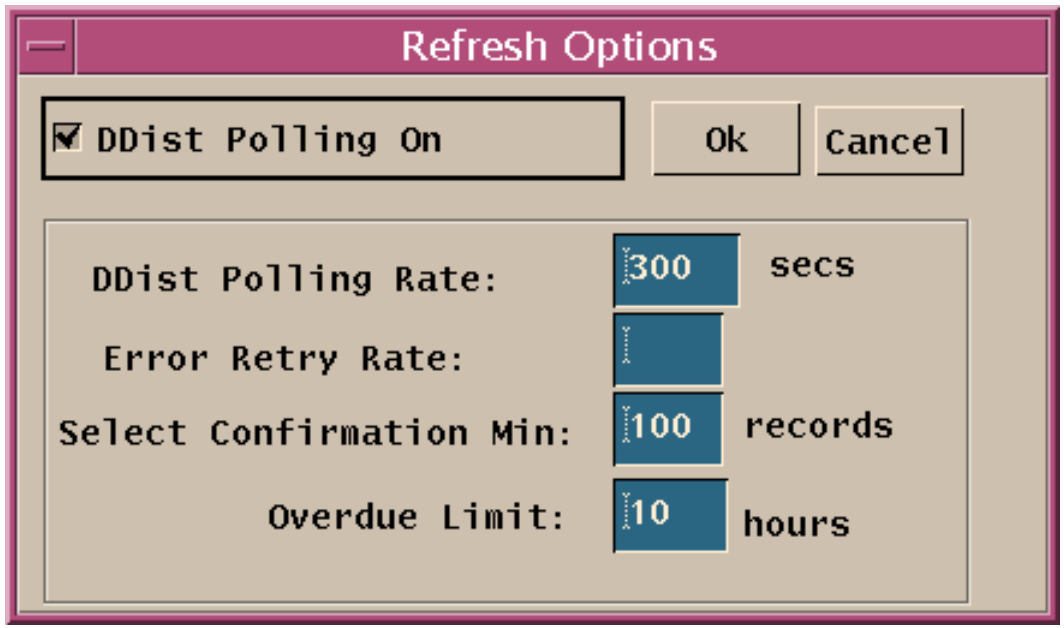
Configuring Data Distribution Polling

- **Refresh Options Dialogue from the GUI Options menu is used for...**
  - **switching the Data Distribution database polling function on or off**
  - **modifying DDist Polling Rate**
    - » **specifies how often (in seconds) the system updates the information displayed in the Track Activity window**
  - **modifying Error Retry Rate**
    - » **specifies the time (in seconds) that the system waits before trying to poll the Data Server after a failed try**
  - **modifying Select Confirmation Min**
    - » **specifies the number of records that triggers a confirmation dialogue box for a selected action**
  - **modifying the Overdue Limit**
    - » **specifies the time limit (in hours) for declaring requests "overdue"**

Configuring Data Distribution Polling (Cont.)

- **Procedure**
  - Select Options → System Settings from the pull-down menu of the Data Distribution Operator GUI
  - Click on the DDist Polling On button to change the state of polling
  - Enter value for the polling rate (if applicable)
    - » default value is 30 seconds
  - Enter value for the error retry rate (if applicable)
  - Enter value for Select Confirmation Min (if applicable)
  - Enter value for Overdue Limit (if applicable)
  - Click on the Ok button to apply the values and dismiss the dialogue box

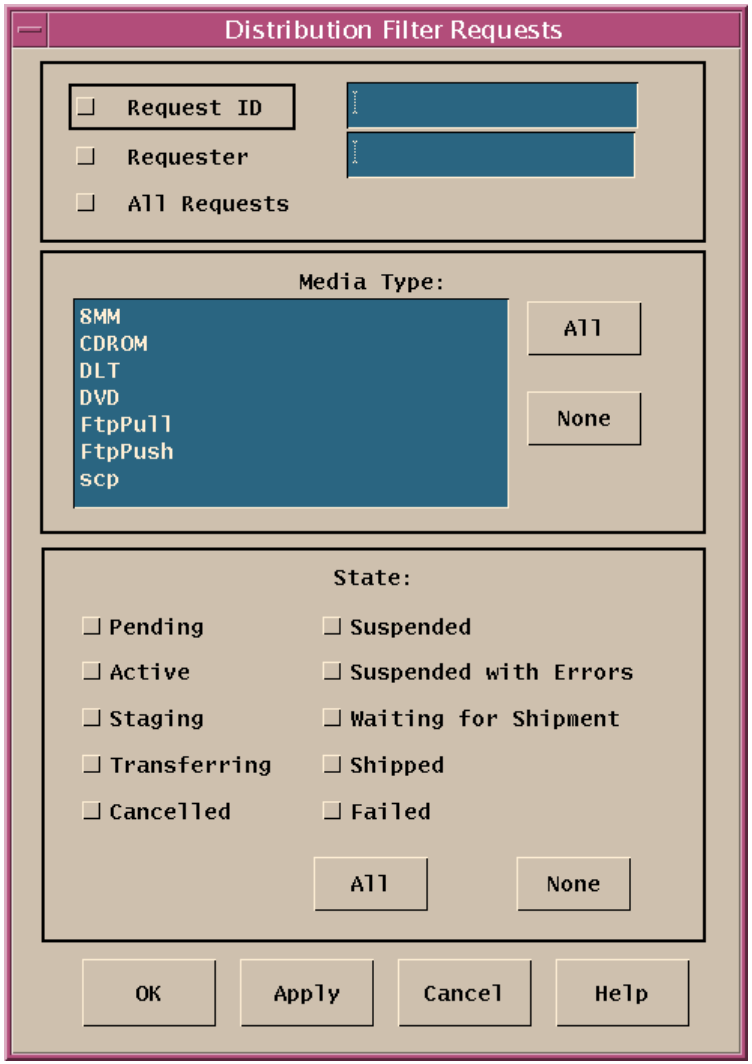
Refresh Options Dialogue Box



Filtering Data Distribution Requests

- **Filtering Data Distribution Requests**
  - **Data distribution requests can be filtered with respect to the following criteria:**
    - » **request ID**
    - » **requester**
    - » **media type**
    - » **state**
  - **Procedure**
    - » **Select View → Filter**
    - » **Select filter criteria**
    - » **Click on the OK button to implement the selections and dismiss the dialogue box**

Distribution Filter Requests Dialogue Box



Changing the Priority of Data Distribution Requests

- **Procedure**
  - **Highlight the distribution request to be assigned a different priority**
  - **Select the new priority using the Change Priority button**
  - **Click on the Apply button to implement the priority change**

Suspending/Resuming Data Distribution Requests

- Under certain circumstances it may be advisable to suspend the processing of a data distribution request and resume it at a later time
- Procedure
  - Click on the Suspend New Requests button to suspend all new distribution requests
  - Select the individual distribution request to be suspended and click on the Suspend button to suspend a single distribution request
  - Click on the Resume New Requests button to resume processing of all new distribution requests
  - Select the individual distribution request for which processing is to be resumed and click on the Resume button to resume processing of a single distribution request

Canceling Data Distribution Requests

- Sometimes it may be necessary to cancel the processing of a data distribution request
- Procedure
  - Select the distribution request to be canceled
  - Click on the Cancel button

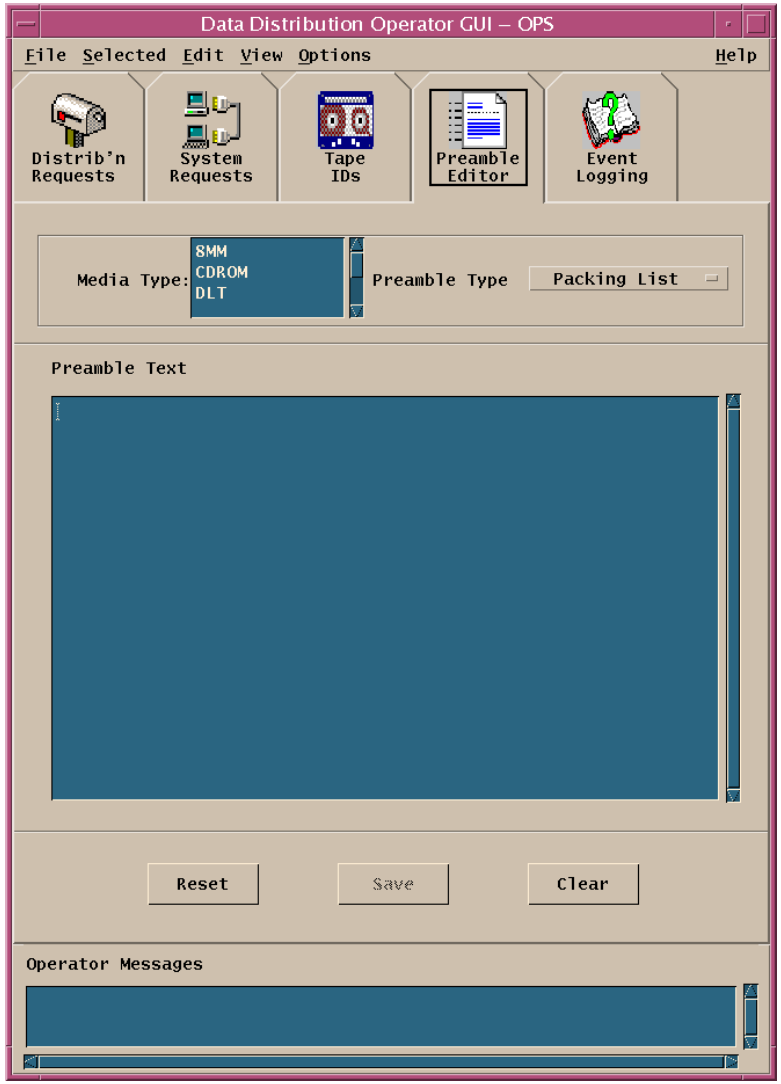
Modifying Preambles

- **Preamble Editor tab on the Data Distribution Operator GUI allows the Distribution Technician to review and/or modify the text of preambles to the following types of documents:**
  - **Packing list**
  - **Successful e-mail**
  - **Failed e-mail**
- **Preambles for different types of distribution are accessible in the /usr/ecs/*MODE*/CUSTOM/data/DSS directory on the Distribution Server host (Sun internal server host)**

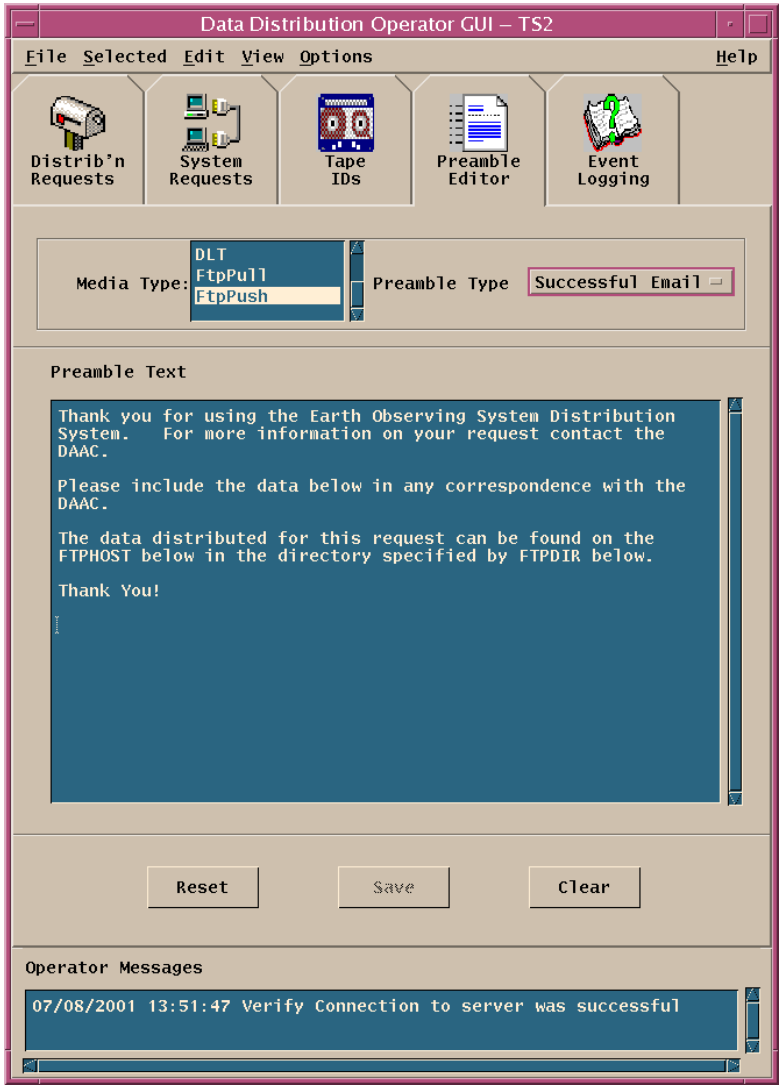
Modifying Preambles

- **Types of media:**
  - **8MM**
  - **CDROM**
  - **DLT**
  - **DVD**
  - **Ftp pull**
  - **Ftp push**
  - **Secure copy distribution (scp)**

Data Distribution Operator GUI: Preamble Editor Tab



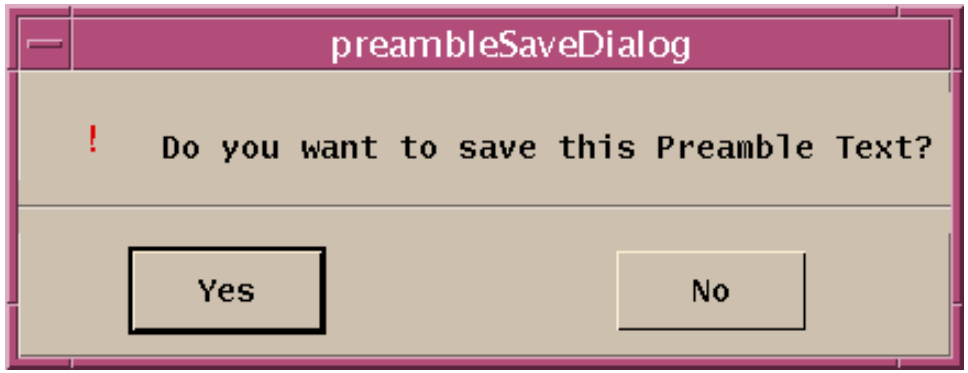
Data Distribution Operator GUI: FTP Push Successful E-Mail



Modifying Preambles (Cont.)

- **Procedure**
  - **Select the Preamble Editor tab of the Data Distribution Operator GUI**
  - **Select the appropriate media type**
  - **Select the appropriate preamble type**
  - **Edit the preamble text**
  - **Save the edited preamble**

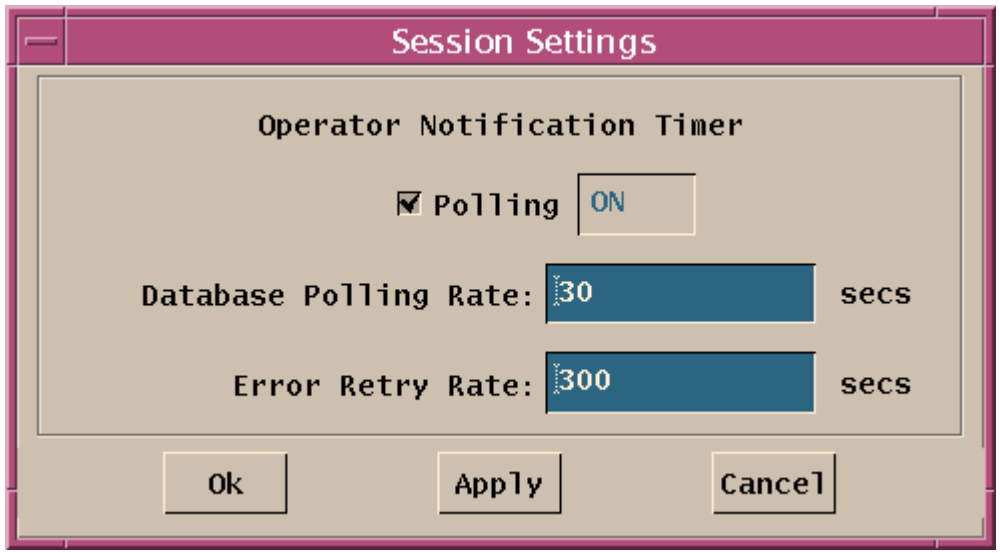
Preamble Save Confirmation Dialogue Box



Configuring STMGT Polling & Deleting Files from Cache

- **Configuring Storage Management Polling (Storage Management Control GUI Options menu)**
  - **Switch Operator Notification Timer polling on or off**
  - **Modify parameters**
    - » **Database Polling Rate**
    - » **Error Retry Rate**

Storage Management Control GUI: Session Settings Dialogue



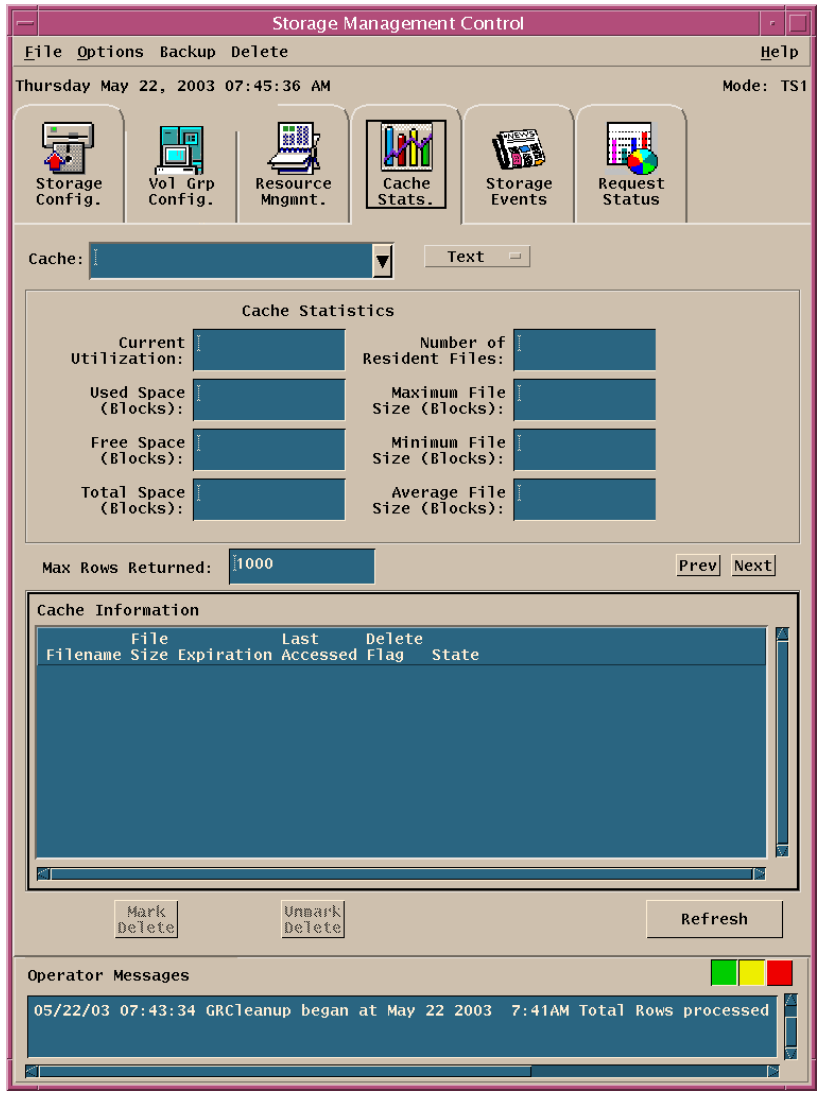
Configuring STMGT Polling & Deleting Files from Cache (Cont.)

- **Configuring Storage Management Polling: Procedure**
  - **Select Options → System Settings from the pull-down menu on the Storage Management Control GUI**
  - **Set the Operator Notification Timer to the appropriate polling state (off or on) if applicable**
  - **Enter the database polling rate if applicable**
  - **Set the error retry rate if applicable**
  - **Apply the modifications**

Configuring STMGT Polling & Deleting Files from Cache (Cont.)

- **Cache Stats. tab on the Storage Management Control GUI**
  - **Displays all of the files that are in the cache areas, including the Pull Monitor and other staging areas**
  - **Displays general statistics on the selected cache**
  - **Allows the operator to manually delete expired files in cache areas**
  - **A just-enough-cache cleanup strategy has been implemented**
    - » **Caches (including the Pull Area) generally remain full because each cache manager (including the cache manager that is configured as the Pull Monitor or Pull Area Manager) automatically identifies and removes just enough old files to accommodate new ones**
    - » **Consequently, it is likely that manual cache cleanup will not be performed very often**

Storage Management Control GUI: Cache Stats. Tab



Configuring STMGT Polling & Deleting Files from Cache (Cont.)

- **Deleting Files from Cache: Procedure**
  - **Select the Cache Stats. tab on the Storage Management Control GUI**
  - **Select the cache containing the files to be deleted**
  - **Select the file to be deleted from the cache**
  - **Click on the Mark Delete button**
  - **If any file has been inadvertently marked Delete, first click on the row corresponding to the file then click on the Unmark Delete button**

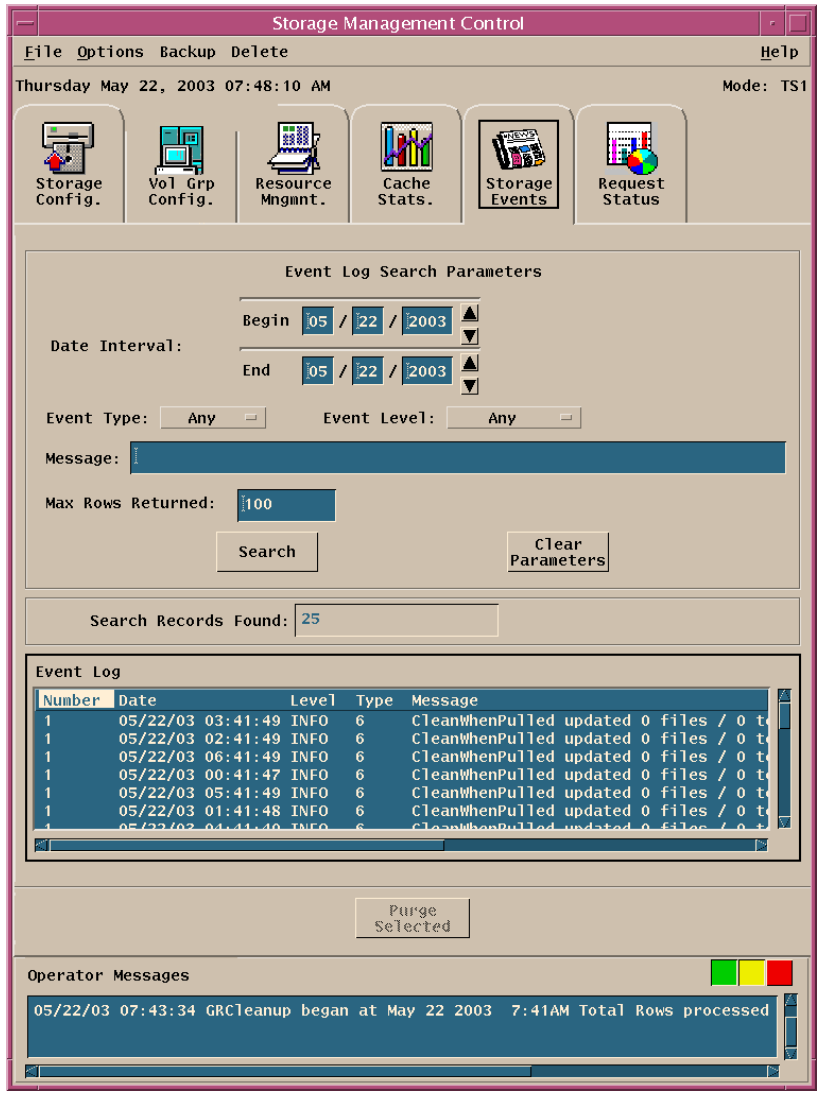
Configuring STMGT Polling & Deleting Files from Cache (Cont.)

- **Viewing Storage Management Event Log Information: Storage Events tab on the Storage Management Control GUI**
  - **Search the Event Log**
  - **Obtain reports on events that have occurred in Storage Management**
  - **Review information concerning a particular Storage Management event**
    - » **Number**
    - » **Date**
    - » **Level**
    - » **Type**
    - » **Message**

Configuring STMGT Polling & Deleting Files from Cache (Cont.)

- **Storage Events tab (Cont.)**
  - **Search criteria (can be used individually or in combination to view entries in the Event Log)**
    - » **Date Interval**
    - » **Event Type**
    - » **Event Level**
    - » **Message**

Storage Management Control GUI: Storage Events Tab



Configuring STMGT Polling & Deleting Files from Cache (Cont.)

- **Viewing Storage Management Event Log Information: Procedure**
  - **Select the Storage Events tab of the Storage Management Control GUI**
  - **Enter the defining characteristic(s) (e.g., time period, event type, event level) of the event**
  - **Click on the Search button to search the event log for events that meet the specified criteria**
  - **Observe event information displayed in the Event Log table**

Monitoring Storage Management Server Operations

- **The Request Status tab on the Storage Management Control GUI**
  - **Makes it possible to monitor processing activity in all of the storage management servers for a given mode**
- **Request Status Information table**
  - **Lists the requests that are currently being serviced by storage management servers and those that have been completed within the last 24 hours**
  - **Using the Request Status tab the Distribution Technician can detect stalled requests or servers that appear to be idle**

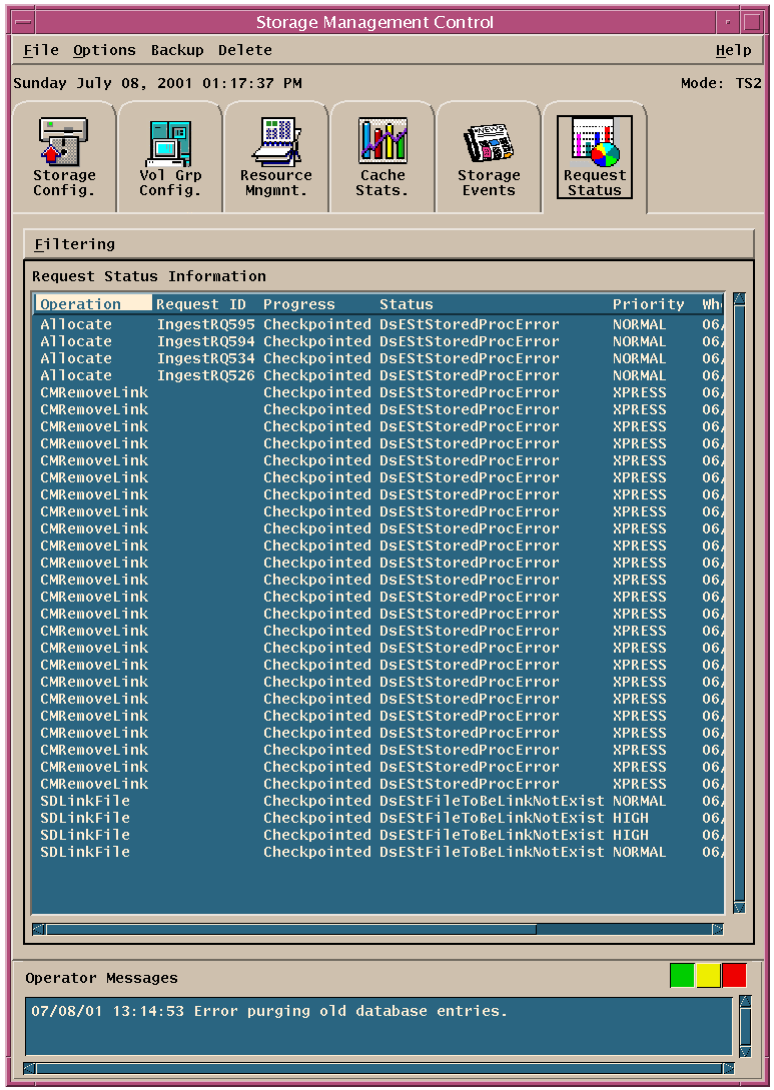
Monitoring Storage Management Server Operations (Cont.)

- **Request Status Information table contents**
  - **Operation [type of operation]**
  - **Request ID**
  - **Progress [current stage of processing]**
  - **Status**
  - **Priority**
  - **When Submitted [time and date received by the server that is responsible for the request]**
  - **Last Updated [time and date status was last updated]**

Monitoring Storage Management Server Operations (Cont.)

- **Procedure**
  - Click on the Storage Management Control GUI Request Status tab
  - Observe information displayed on the Request Status tab of the Storage Management Control GUI
  - If necessary, filter the list of Storage Management requests shown in the Request Status Information table by making the appropriate selection from the Filtering pull-down menu:
    - » Server
    - » Operation
    - » Processing State
    - » Submitter
  - Observe the Storage Management requests displayed in the Request Status Information table
  - To exit from the Storage Management Control GUI select File → Exit from the pull-down menu

Storage Management Control GUI: Request Status Tab



Launching the Order Manager GUI

- **Order Manager Subsystem (OMS)**
  - **Manages orders arriving via either…**
    - **V0 Gateway (V0 GTWAY)**
    - **Spatial Subscription Server (NSBRV)**
    - **Machine-to-Machine Gateway (MTMGW)**
    - **Data Pool Web GUI (DPL Web GUI)**
  - **Does not manage orders from some other sources (e.g., input data for Data Processing)**
  - **Performs validation (e.g., limit checking) of the orders it receives before submitting the applicable requests to the order-fulfilling services**

Launching the Order Manager GUI (Cont.)

- **Order Manager Subsystem (OMS)**
  - **If the media type or ESDTs of a request are configured as Synergy III processing mode or the request is pre-staged (i.e., ordered from the Data Pool Web GUI), the server dispatches each validated request to the appropriate ECS order-fulfillment service; i.e., PDS or SDSRV**
  - **Otherwise, the server stages the order to Data Pool storage (and creates links from staged files to the FtpPull directory in Data Pool storage if the distribution type is FtpPull), dispatches the order to the appropriate service (i.e., PDS or OMS Ftp Driver), then sends a Distribution Notice to the end user (when appropriate)**

Launching the Order Manager GUI (Cont.)

- **Order Manager Subsystem (OMS) (Cont.)**
  - **Two modes of operation:**
    - » **S4 (Synergy IV)**
    - » **S3 (Synergy III)**
  - **Two levels of permissions for operation:**
    - » **Full-capability**
    - » **Limited-capability**

Launching the Order Manager GUI (Cont.)

- **Order Manager Subsystem (OMS) (Cont.)**
  - Order Manager performs validation of the orders it receives before submitting the applicable requests to the order-fulfilling services
  - If a request does not pass validation, an "intervention" is created and the request is held until it has been reviewed by a DAAC technician
    - » The intent is to catch many of the kinds of exceptions or errors that have caused requests to fail or be suspended during downstream request processing
    - » Problems include very large orders and inappropriate media selections (given the size of the order)
  - A DAAC technician reviews each intervention and either modifies the request (if possible) or terminates the request (if necessary)
    - » In either case negative effects on downstream processing are less likely to occur

Launching the Order Manager GUI (Cont.)

- Order Manager Subsystem (OMS) (Cont.)
  - Order Manager dispatches each validated request to the appropriate ECS order fulfillment service (i.e., PDS or SDSRV) depending on whether the request is for physical media or electronic distribution
  - If errors are encountered during processing or shipping, the DAAC technician can resubmit the affected request using the Order Manager GUI

Launching the Order Manager GUI (Cont.)

- **Order Manager Subsystem (OMS) (Cont.)**
  - **Order Manager generates an alert and sends an email to a pre-configured email address when it detects internal or external resource failure**
    - » **Order Manager halts the dispatching of requests that are utilizing failed resources**
  - **Alerts indicate problems with resources (interventions indicate problems with requests)**

Launching the Order Manager GUI (Cont.)

- The OM GUI provides ECS operators with access to the Order Manager database
  - Based on web standards
  - Performs most of its functions by accessing the database directly, in contrast to most current ECS operator GUIs, which interface with servers
  - Allows operators to view and modify requests that the Order Manager Server has placed on hold because they require operator intervention
  - Allows operators to resubmit requests or portions of a request that failed
  - For Synergy IV, the OM GUI incorporates much of the Data Distribution Operator GUI functionality in with the expectation that the OM GUI can provide an efficient, centralized interface
  - The Data Distribution Operator GUI is still functional, as is the ECS Data Order Tracking GUI, which also shares functions with the OM GUI

Launching the Order Manager GUI (Cont.)

- **OM GUI Permission Levels**
  - **Full-capability operators have the ability to configure parameters and perform all other actions that can be accomplished with the OM GUI**
  - **Limited-capability operators are able to view a lot of information; however, on the limited-capability GUI some buttons and links have been disabled so it is not possible to perform certain actions or access certain pages**

Launching the Order Manager GUI (Cont.)

- Some OM GUI services (all operators)
  - Monitor for operator interventions
  - View completed interventions
  - View list of all distribution requests, ftp push distribution requests or staging distribution requests
  - View detailed distribution request information
  - View details of an ECS Order
  - View suspended ftp push destinations
  - Monitor for operator alerts caused by ftp push operations, Data Pool file system errors, Archive Server errors, or archive tape errors
  - Monitor processing queue states
  - Monitor the current staging status by media type or ftp push destination
  - View OM Server and OM Database parameters

Launching the Order Manager GUI (Cont.)

- Some OM GUI services (full-capability operators only)
  - Modify request parameters associated with operator interventions
  - Perform the following actions with respect to distribution requests (as appropriate):
    - » Resubmit
    - » Suspend
    - » Resume
    - » Cancel
  - Resume suspended ftp push destinations
  - Suspend/resume processing queue states
  - Suspend/resume staging states
  - Configure OM server and OM database parameters
  - Configure the aging parameters for each ECS priority level

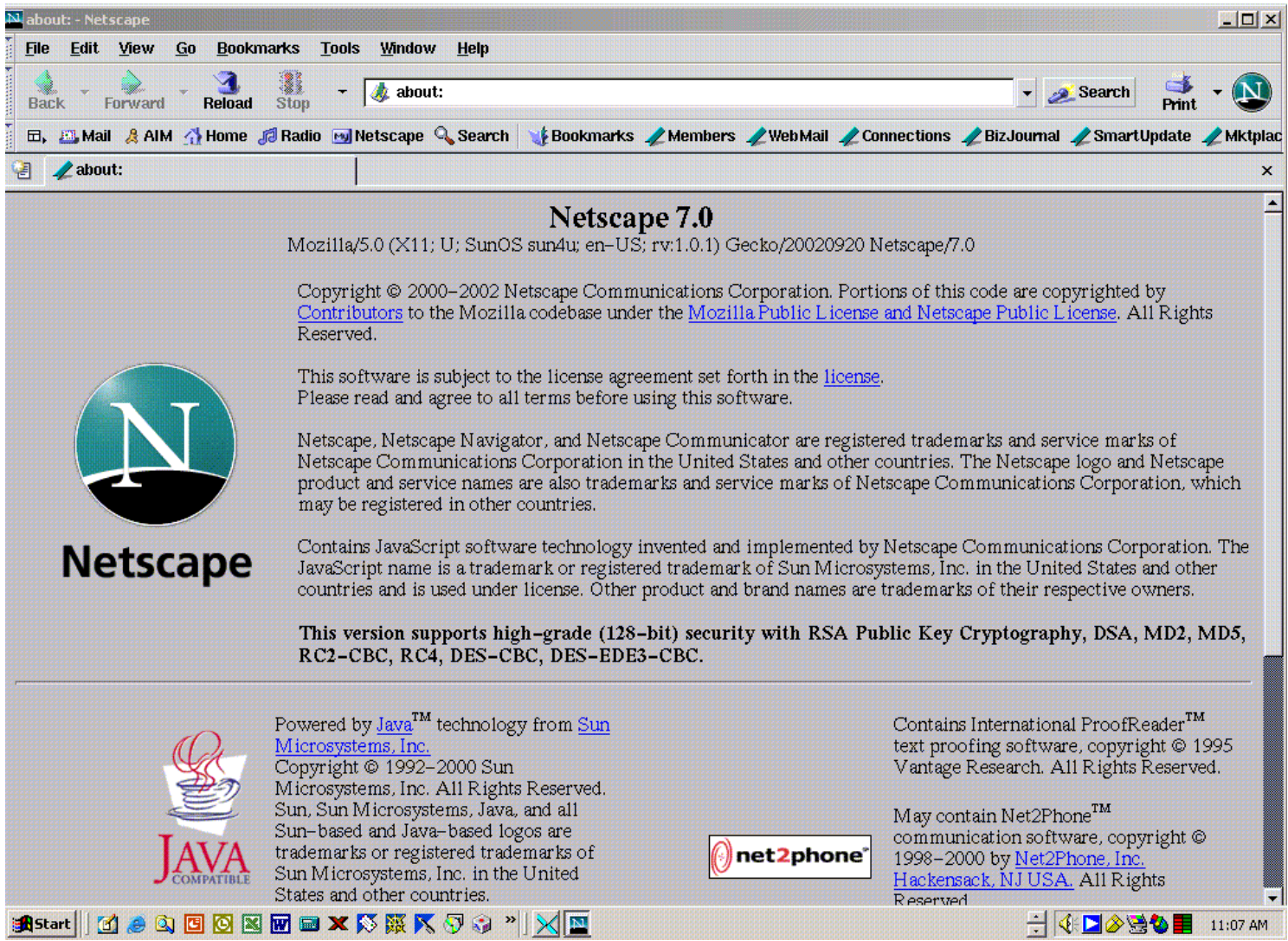
Launching the Order Manager GUI (Cont.)

- **Some OM GUI services (full-capability operators only) (Cont.)**
  - **Configure settings for each media type**
  - **Define and configure ftp push destinations, as well as the "policies" for those destinations**
- **For Synergy IV, the OM GUI is certified for use with Netscape 7 (and higher) browsers**

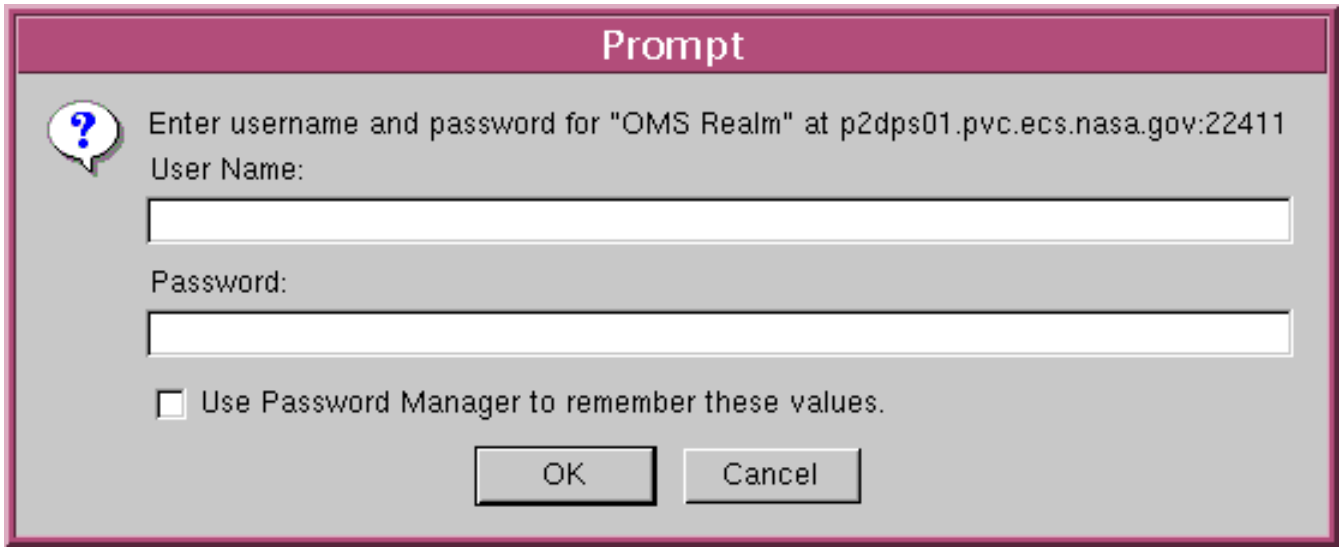
Launching the Order Manager GUI (Cont.)

- **Procedure**
  - Log in to an appropriate host using secure shell
  - Enter the command to start the Netscape 7 browser
  - Select the bookmark or enter the URL to access the OM GUI in the specified mode
  - Perform the security log-in

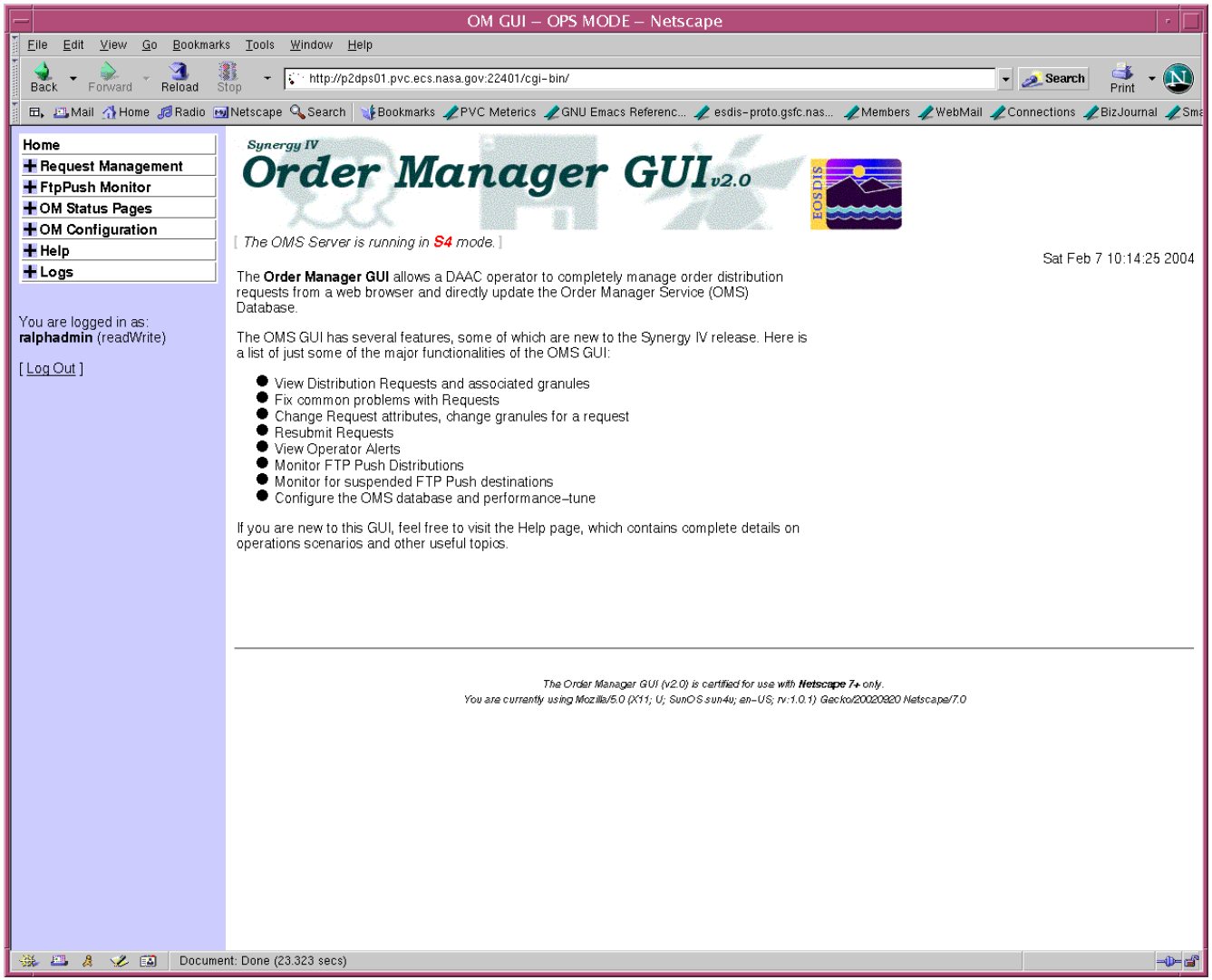
Netscape Web Browser



Security Login Prompt



OM GUI: Order Manager Page ["Home" Page]



Monitoring/Controlling Order Manager Operations

- Order Manager Activities
- Distribution Technician activities involve the following OM GUI pages:
  - Request Management
    - » Open Interventions
    - » Completed Interventions
    - » Distribution Requests
    - » FTP Push Distribution Requests
    - » Staging Requests
    - » Operator Alerts
  - FtpPush Monitor
    - » FTP Push Distribution Requests
    - » Suspended Destinations

Monitoring/Controlling Order Manager Operations

- **Distribution Technician activities involve the following OM GUI pages (Cont.):**
  - **OM Status Pages**
    - » **OM Queue Status**
    - » **Staging Status:**
      - **Media Type**
      - **FTP Push Destination**
  - **OM Configuration**
    - » **Aging Parameters**
    - » **Server/Database**
    - » **Media**
    - » **FTP Push Policy**
  - **Help**
    - » **About HelpOnDemand**
    - » **Help**

Monitoring/Controlling Order Manager Operations

- **Distribution Technician activities involve the following OM GUI pages (Cont.):**
  - **Logs**
    - » **OM GUI Log Viewer**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Order Manager Activities (Cont.)**
  - **The full-capability operator performs the following tasks when monitoring and controlling Order Manager operations using the OM GUI:**
    - » **Viewing Open Intervention Information on the OM GUI**
    - » **Setting Refresh Options on OM GUI Pages**
    - » **Responding to an Open Intervention**
    - » **Monitoring/Controlling Distribution Request Information on the OM GUI**
    - » **Filtering Data Displayed on the Distribution Requests Pages**
    - » **Changing the Priority of a Distribution Request Using the OM GUI**
    - » **Suspending, Resuming, Canceling, or Resubmitting a Distribution Request Using the OM GUI**
    - » **Editing FtpPush Parameters**
    - » **Viewing Operator Alerts on the OM GUI**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Order Manager Activities (Cont.)**
  - **Full-capability operator tasks (Cont.):**
    - » **Viewing Completed Intervention Information on the OM GUI**
    - » **Filtering Data Displayed on the Completed Interventions Page**
    - » **Viewing and Responding to Suspended FTP Push Distribution Destinations**
    - » **Viewing and Responding to Destinations Details on the OM GUI**
    - » **Checking/Modifying OM Queue Status**
    - » **Checking Staging Status**
    - » **Checking/Modifying Aging Parameters**
    - » **Checking/Modifying OMS Server or Database Parameters**
    - » **Checking/Modifying Media Parameters**
    - » **Checking/Modifying FTP Push Policy Configuration**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Order Manager Activities (Cont.)**
  - **Full-capability operator tasks (Cont.):**
    - » **Adding Destinations to the Frequently Used Destinations List**
    - » **Modifying Values Assigned to Parameters of Frequently Used Destinations**
    - » **Viewing the OM GUI Log**

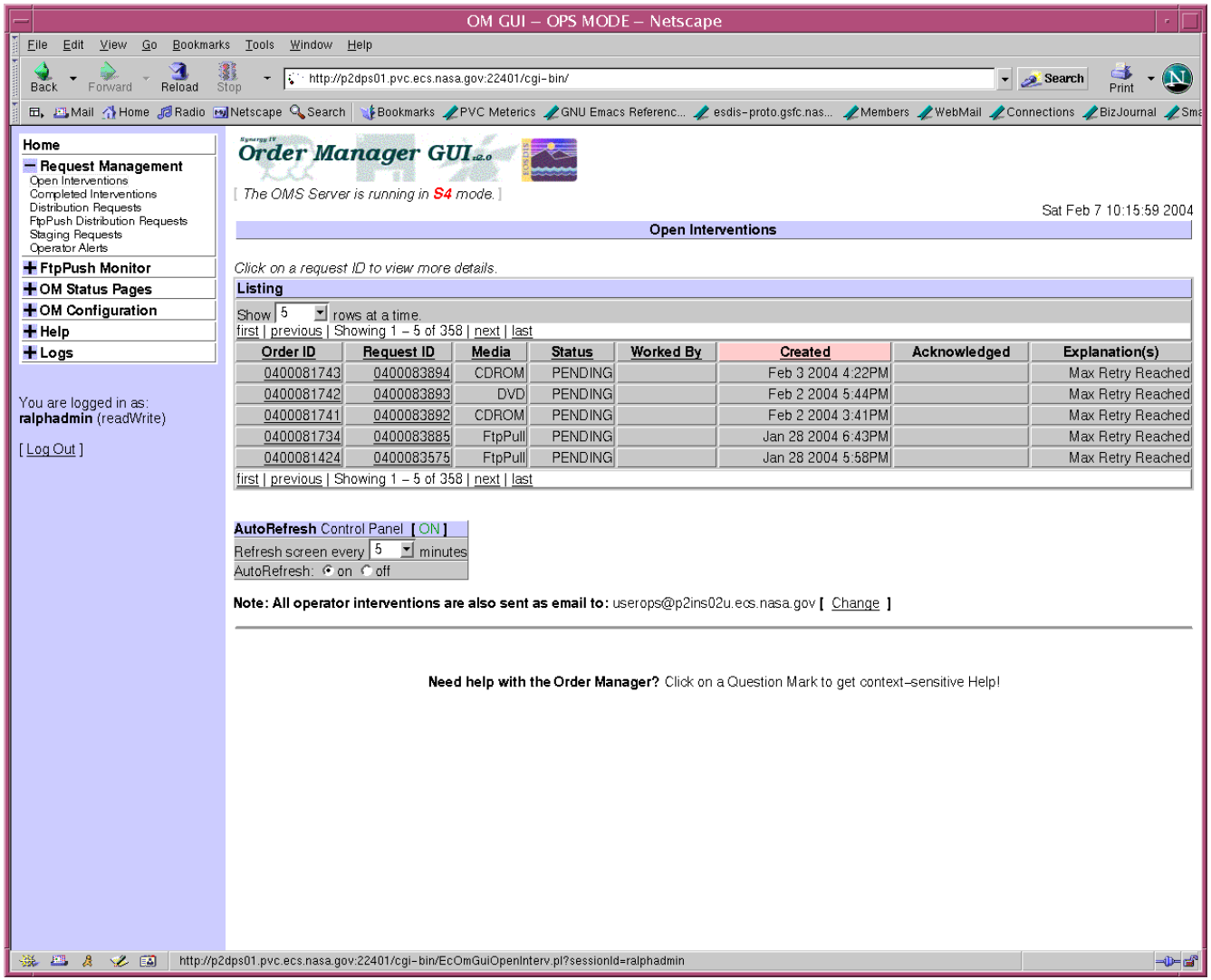
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing Open Intervention Information on the OM GUI**
  - **The Open Interventions page provides the full-capability operator with a means of viewing and responding to open interventions**
    - » **The limited-capability operator can view but cannot work on (respond to) open interventions.**

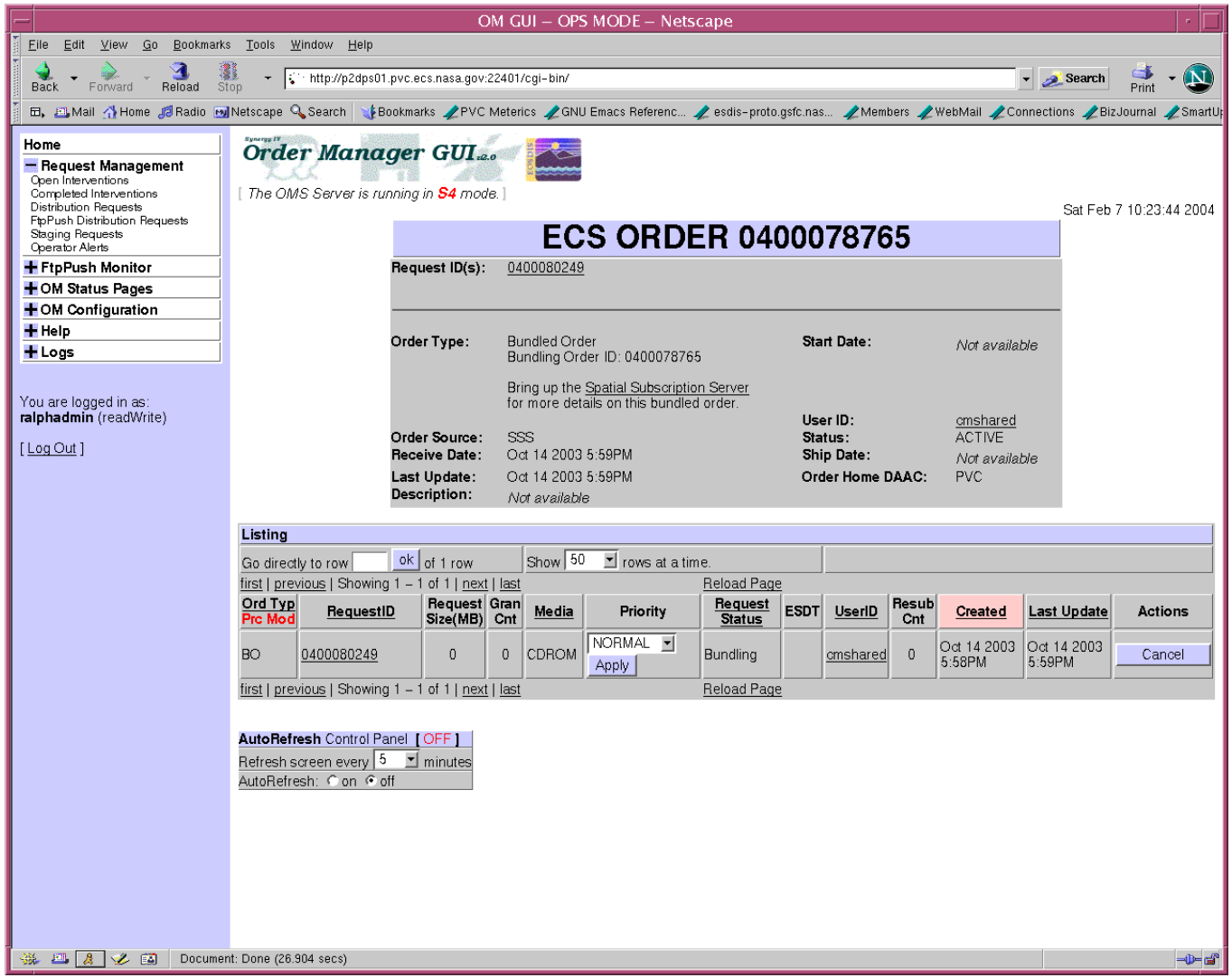
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing Open Intervention Information on the OM GUI: Procedure**
  - **Select the Open Interventions link from the OM GUI**
  - **Observe information displayed in the Listing table of the Open Interventions page**
  - **Select the Open Intervention Detail page for the specified intervention**
  - **Observe information displayed on the Open Intervention Detail page**
  - **To work on the intervention being displayed on the Open Intervention Detail page, perform the procedure for Responding to an Open Intervention**

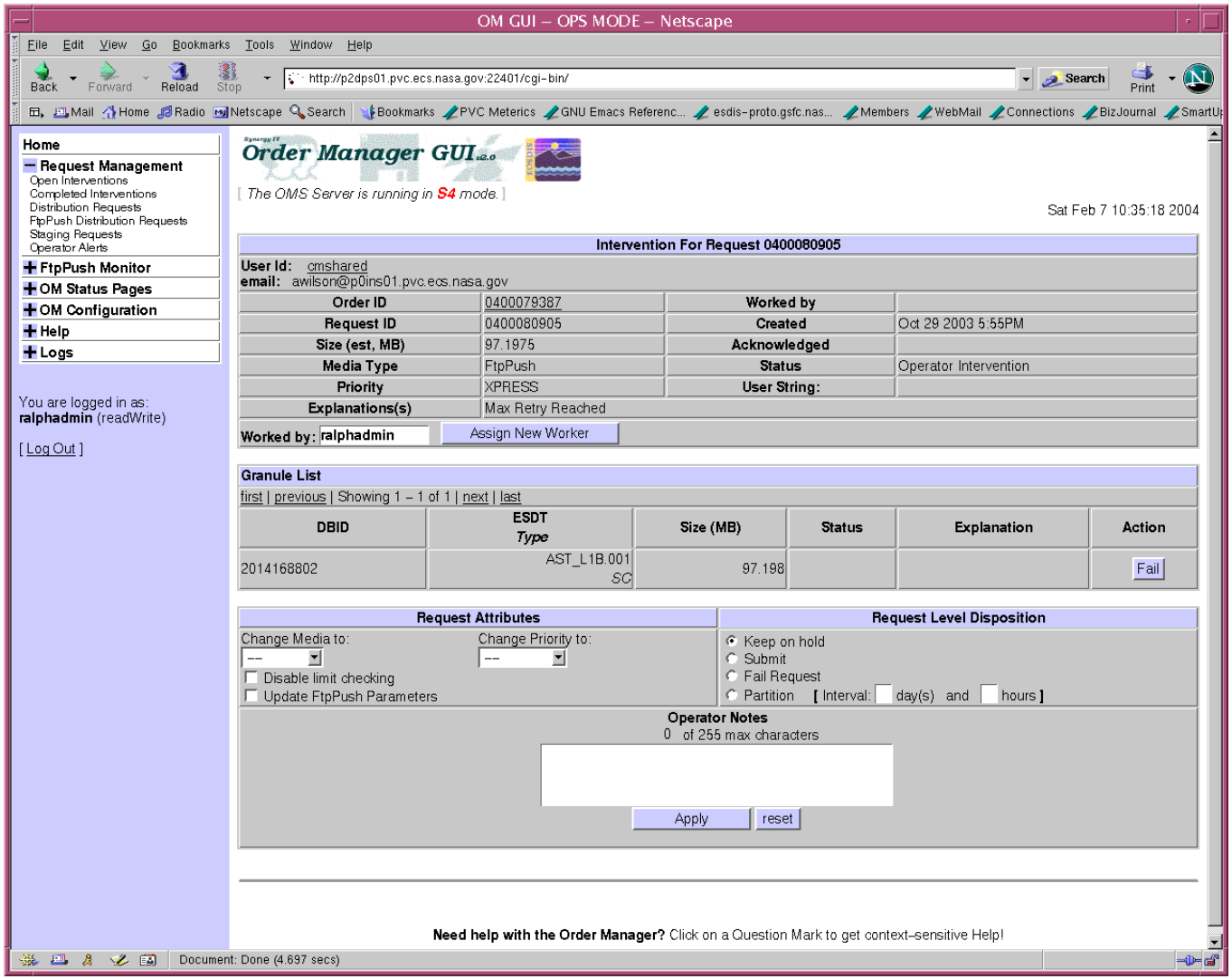
OM GUI: Open Interventions Page



OM GUI: ECS Order Screen (Bundled Order)



OM GUI: Open Intervention Detail Page



Monitoring/Controlling Order Manager Operations (Cont.)

- **Setting Refresh Options on OM GUI Pages**
  - **Buttons at the bottom of OM GUI pages provide the Distribution Technician (whether full-capability or limited capability operator) with a means of setting refresh options**
- **Procedure**
  - **Click on the appropriate AutoRefresh radio button at the bottom of the OM GUI page (if applicable)**
    - » **on**
    - » **off**
  - **To change the refresh rate (if AutoRefresh is ON), select the number of minutes from the Refresh screen every x minutes option button**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Responding to an Open Intervention**
  - **The Open Intervention Detail page provides the full-capability operator with a means of performing the following kinds of interventions (limited-capability operators are not allowed to work on open interventions):**
    - » **Select a different granule to replace a granule that is unavailable**
    - » **Fail selected granule(s)**
    - » **Disable limit checking**
    - » **Change the distribution medium for a request**
    - » **Resubmit a request**
    - » **Fail a request**
    - » **Partition (divide) a request**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Responding to an Open Intervention (Cont.)**
  - **The response to an intervention may require coordination between the Distribution Technician and a User Services representative**
    - » **Especially when determining a more suitable type of distribution medium, selecting a replacement granule, or taking any other action that would require contacting the person who submitted the order**
  - **Depending on the circumstances and DAAC policy it may be appropriate for User Services to assume responsibility for the eventual disposition of some interventions**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Responding to an Open Intervention: Procedure**
  - Assign self to work on the intervention
  - Select the appropriate attributes of the intervention
    - » Change granule DBID
    - » Fail granule
    - » Disable limit checking
    - » Change media type
    - » Change priority
    - » Indicate that ftp push parameters should be updated
    - » Resubmit request
    - » Fail Request
    - » Partition request
    - » Enter operator notes concerning the request
  - Click on the Apply button
  - Confirm the disposition of the intervention

Monitoring/Controlling Order Manager Operations (Cont.)

- **Responding to an Open Intervention (Cont.)**
  - Ensure that the person working on the intervention is specified
  - If the order is a bundled order (Order Type "Bundled Order" or "BO"), the Order page includes a link to the Spatial Subscription Server GUI
  - "Failing" a granule is a permanent action and cannot be canceled after having been confirmed
  - The Disable limit checking option makes it possible to override the standard media capacity limits for a particular media type and is most likely to be applied to a non-physical media type (i.e., ftp push, ftp pull, or scp)

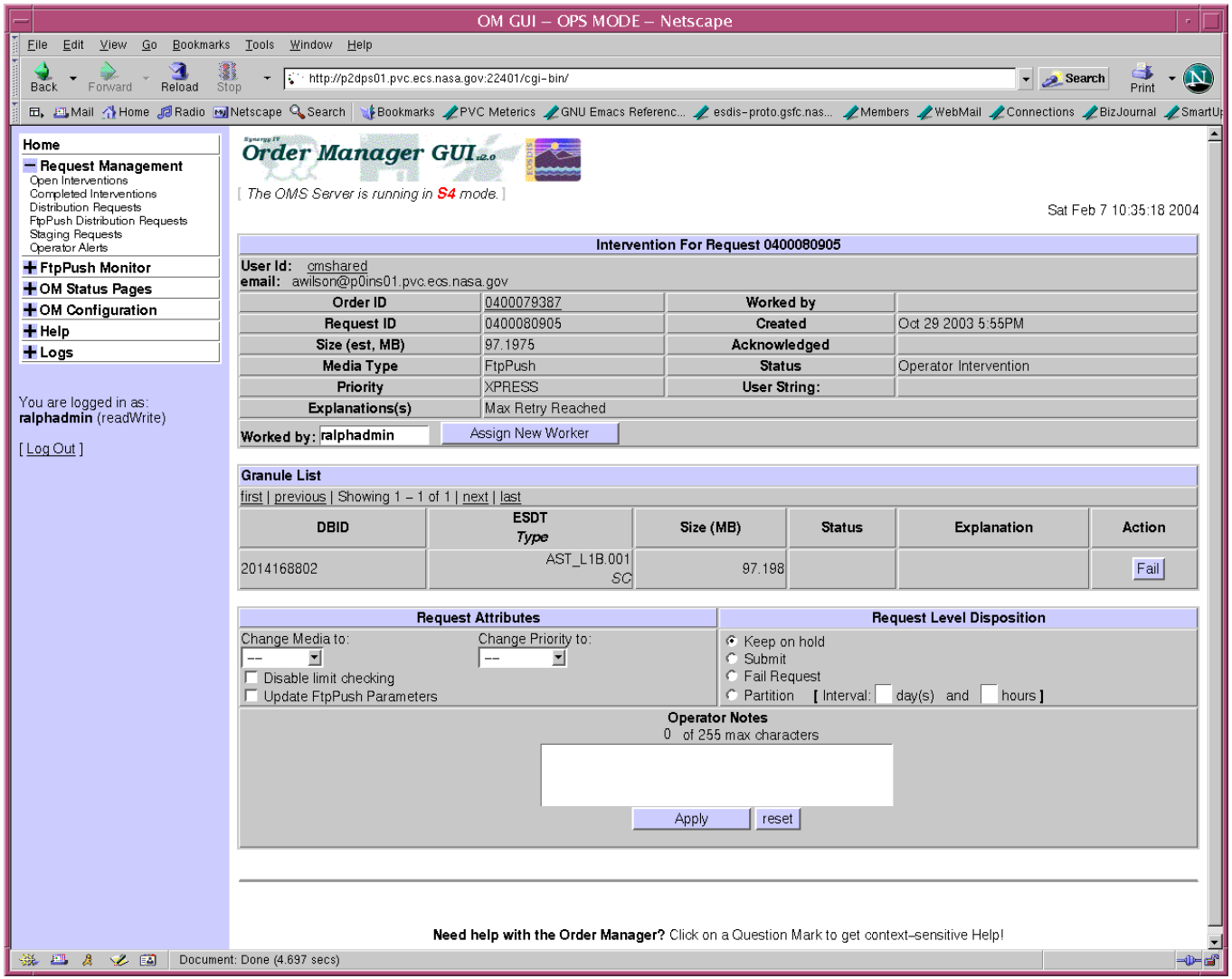
Monitoring/Controlling Order Manager Operations (Cont.)

- **Responding to an Open Intervention (Cont.)**
  - **Placing an intervention on hold does not allow changing the request's attributes, but saves the operator notes and allows opening the intervention at a later time ("saves" the intervention)**
  - **There are Apply and Reset buttons at the bottom of the Intervention page**
    - » **The Reset button does not cancel any changes made to the request or changes made to the DBIDs (changed or failed)**
    - » **It simply resets the form buttons for the Request Level Disposition section to their original states**

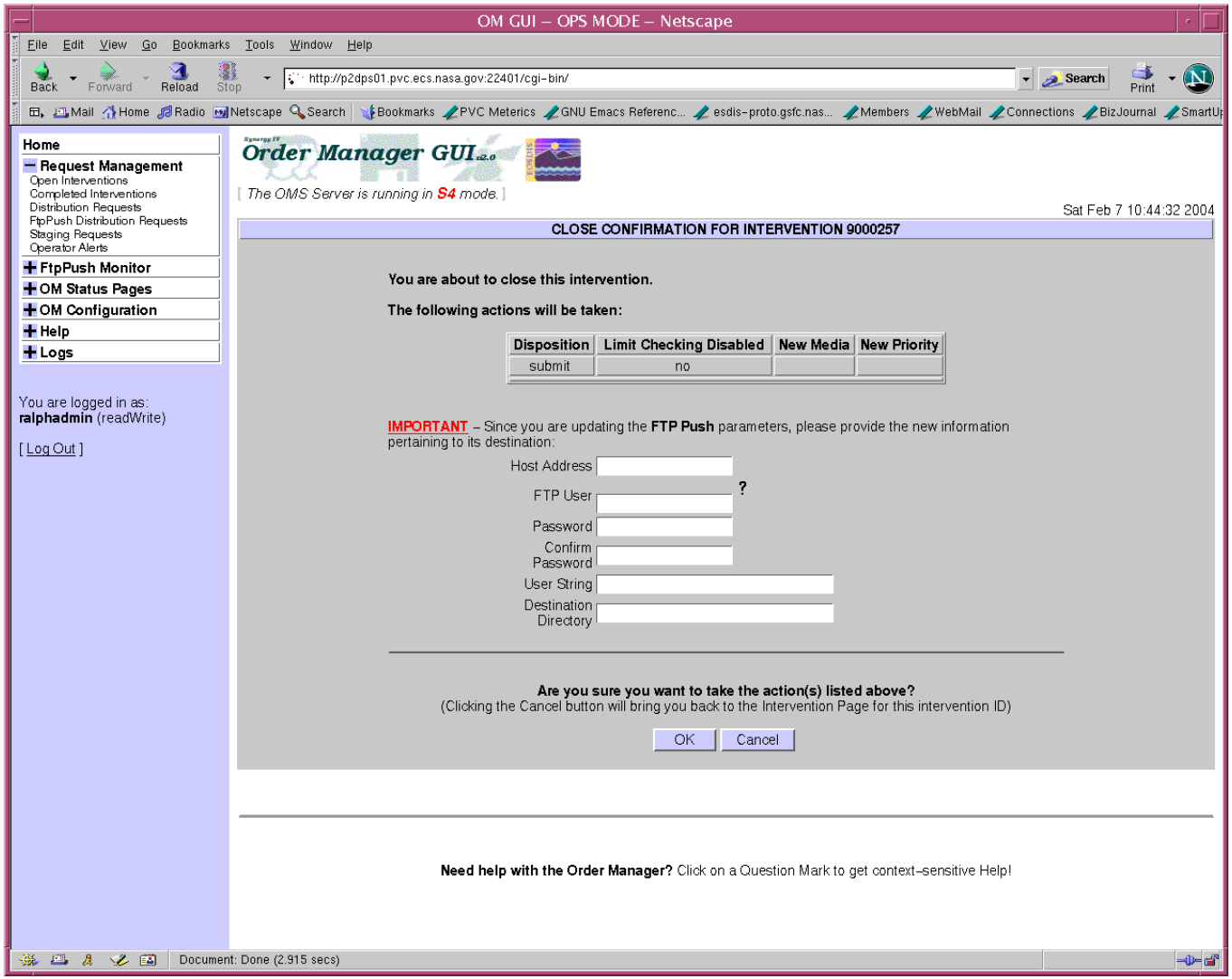
Monitoring/Controlling Order Manager Operations (Cont.)

- Responding to an Open Intervention (Cont.)
  - The Update FtpPush Parameters option appears on the confirmation page when the media type for the request is ftp push
    - » The Update FtpPush Parameters option provides a means of editing the existing ftp push information when the intervention is closed
  - If it was necessary to fail a request or granule(s) within a request, the confirmation page includes options for either appending additional text to the default e-mail message to be sent to the requester or choosing not to send an e-mail message
    - » An Additional e-mail text text box for appending text (if desired) to the standard e-mail text is displayed on the confirmation page
    - » A Don't send e-mail button (to suppress the sending of an e-mail message) is displayed on the confirmation page

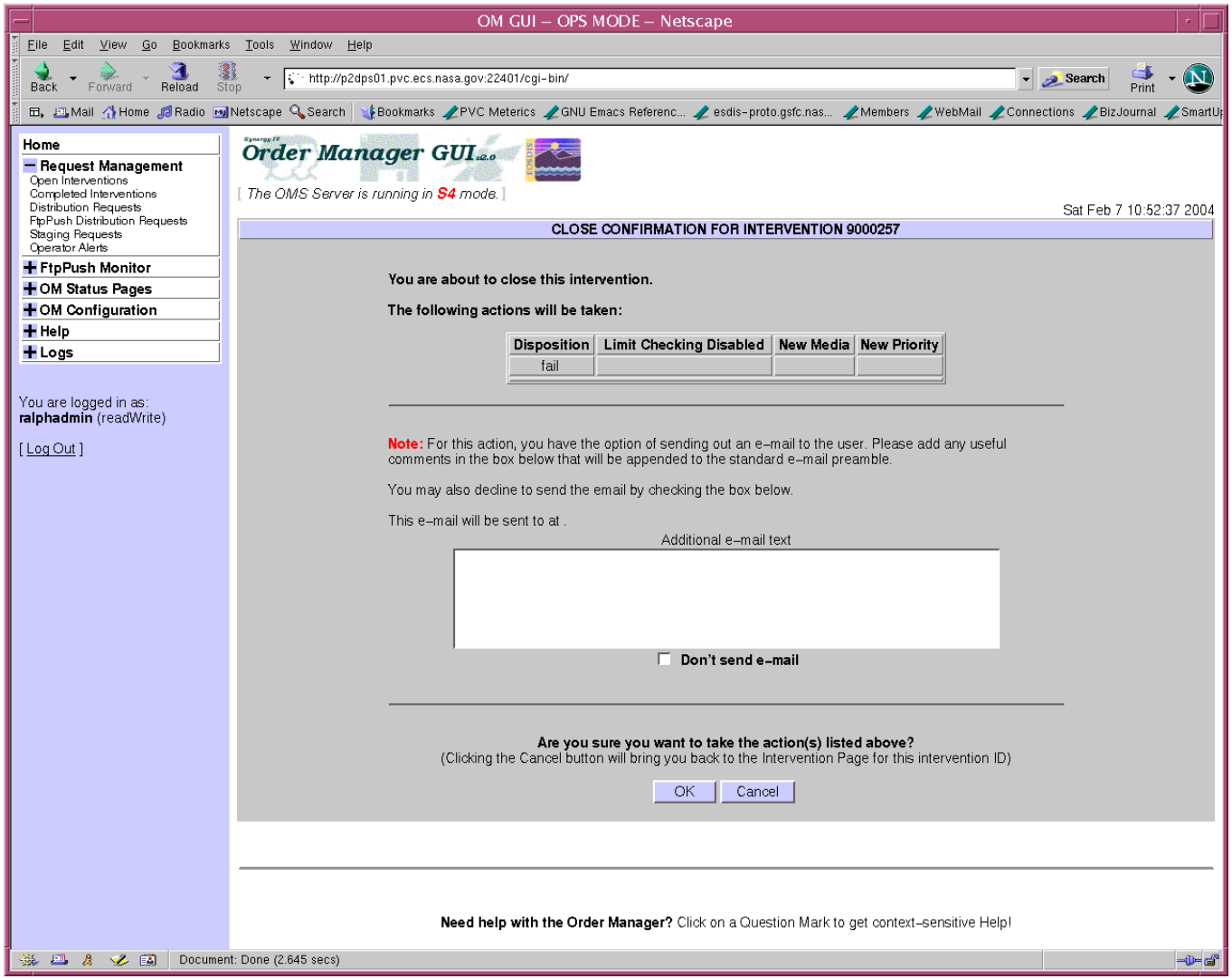
OM GUI: Open Intervention Detail Page



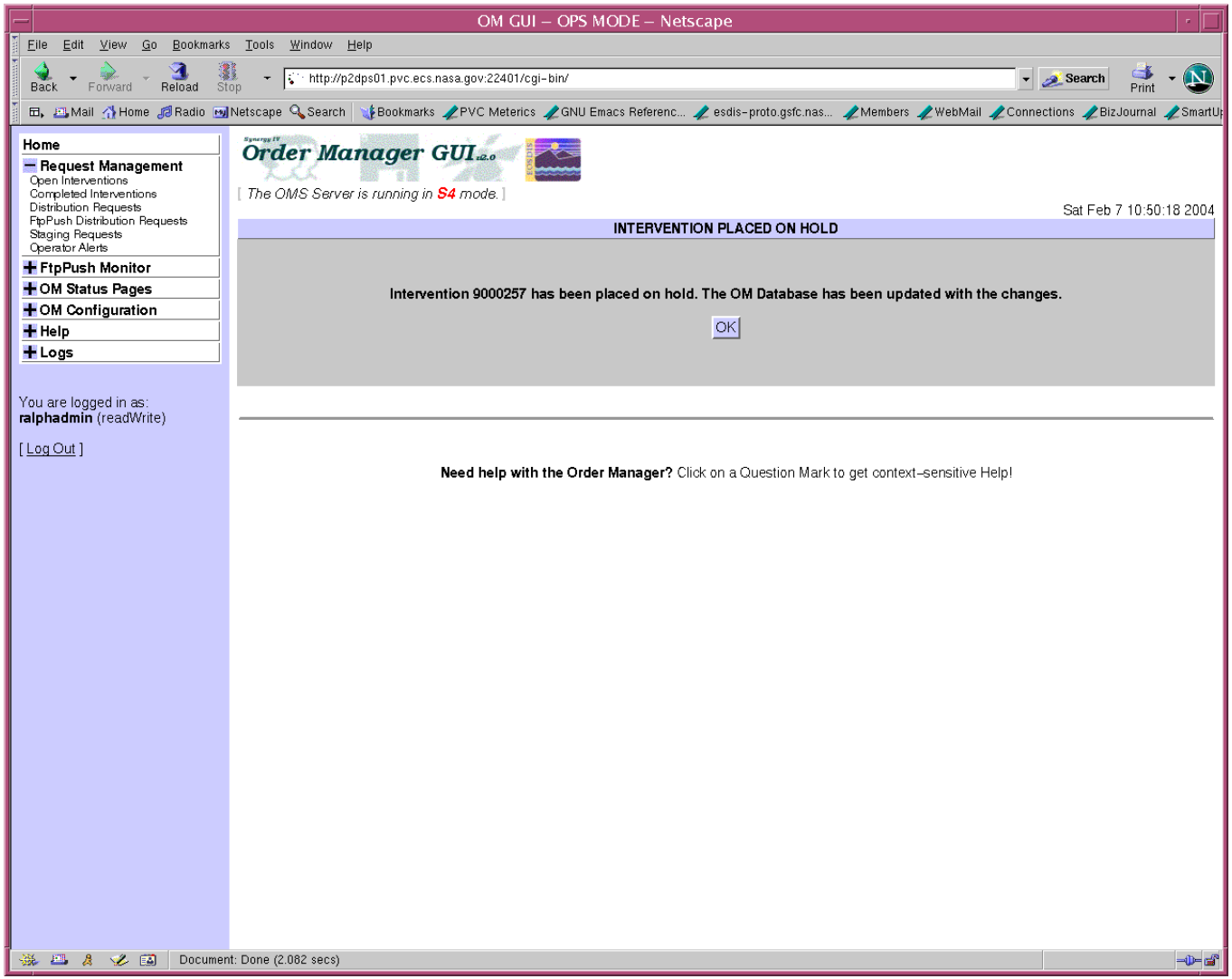
OM GUI: Close Confirmation for Intervention *X* Page



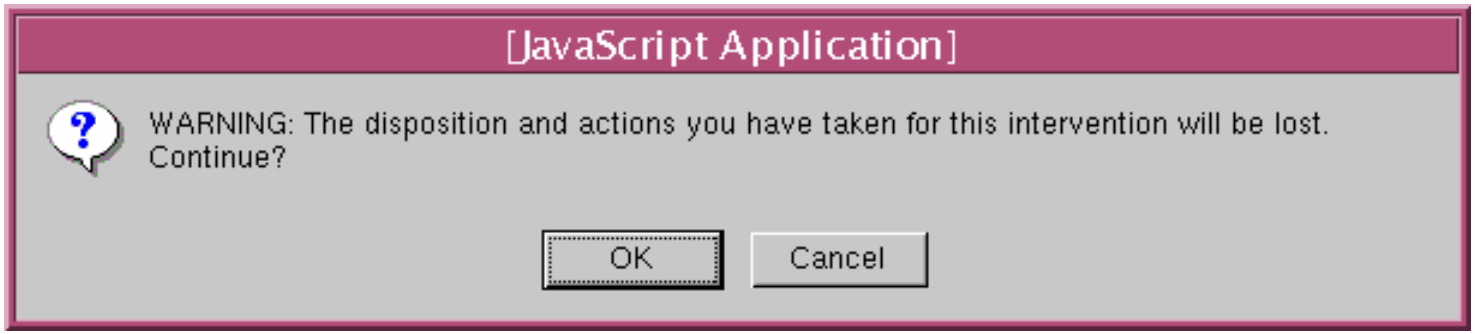
OM GUI: Close Confirmation Page with Additional E-Mail Text Box



OM GUI: Intervention Disposition Page



OM GUI: Continue Question Dialogue Box



Monitoring/Controlling Order Manager Operations (Cont.)

- **Monitoring/Controlling Distribution Request Information on the OM GUI**
  - **The following three OM GUI pages provide the full-capability operator with a means of viewing distribution request information on the OM GUI and a means of taking actions with respect to distribution requests:**
    - » **Distribution Requests page**
    - » **Staging Distribution Requests page**
    - » **FtpPush Distribution Requests page**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Monitoring/Controlling Distribution Request Information on the OM GUI (Cont.)**
  - **The distribution requests pages allow the full-capability operator to take the following kinds of actions with respect to distribution requests:**
    - » **Change the priority of a distribution request while granules for the request still need to be staged or while granules for the request still need to be pushed**
    - » **Resubmit a request in a terminal state (e.g., aborted, cancelled, terminated, or shipped)**
    - » **Suspend a request that still needs to be staged or while granules for the request still need to be pushed**
    - » **Resume a request that was suspended by the OM GUI operator or while the processing of new requests by the OMS is suspended**
    - » **Cancel a request that is not in a terminal state and while granules for the request still need to be staged or pushed**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Monitoring/Controlling Distribution Request Information on the OM GUI (Cont.)**
  - **The limited-capability operator can use the distribution requests pages to view distribution request information but is not allowed to take action on distribution requests**

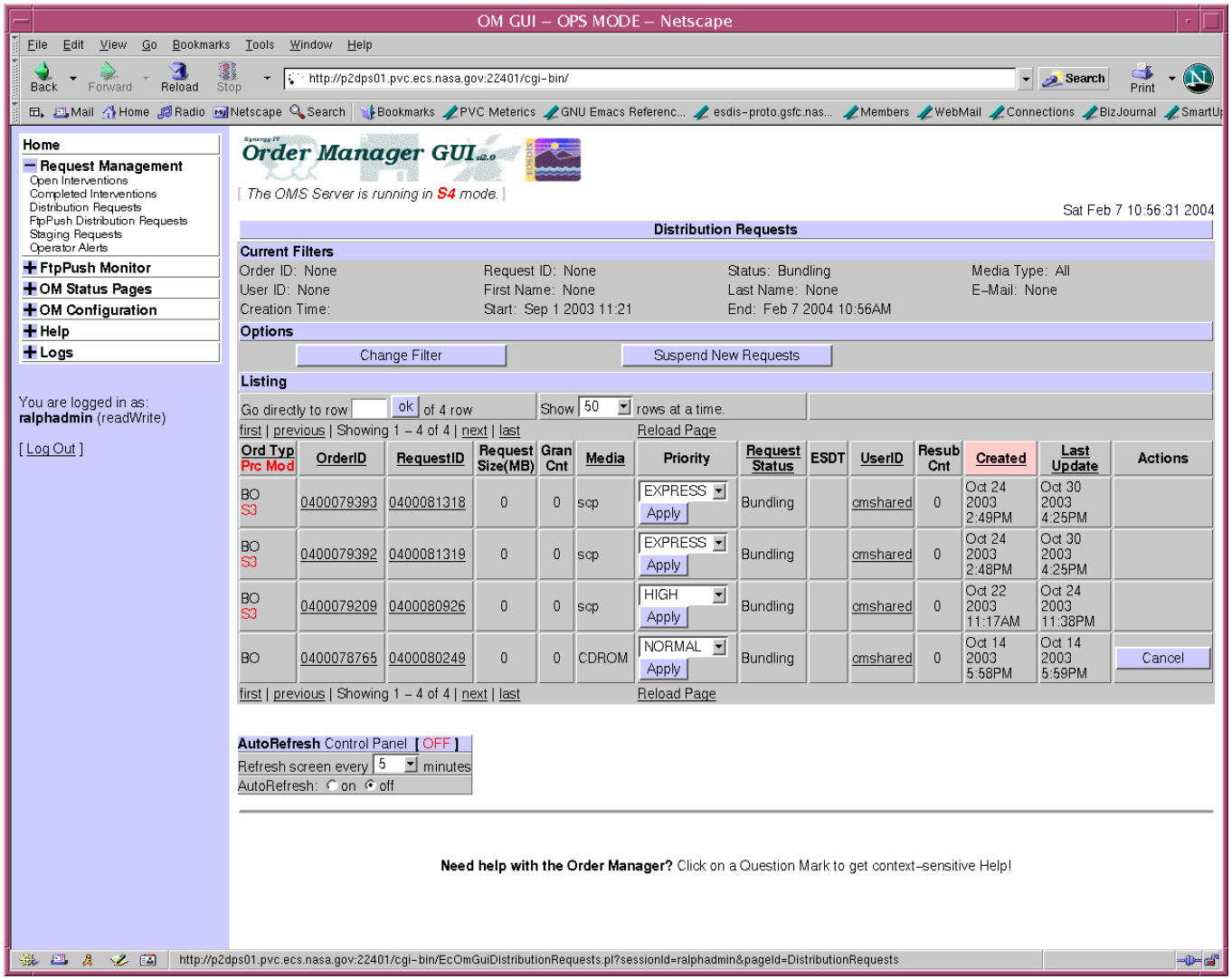
Monitoring/Controlling Order Manager Operations (Cont.)

- **Monitoring/Controlling Distribution Request Information on the OM GUI: Procedure**
  - **Select the Distribution Requests link on the OM GUI**
  - **Observe information displayed in the Listing table of the Distribution Requests page**
  - **Filter data displayed on the Distribution Requests page (if necessary)**
  - **Select the Suspend New Requests button (as necessary)**
  - **Select the Resume New Requests button (as necessary)**
  - **Perform associated procedures as necessary:**
    - » **Changing the Priority of a Distribution Request Using the OM GUI**
    - » **Suspending, Resuming, Canceling, or Resubmitting a Distribution Request Using the OM GUI**

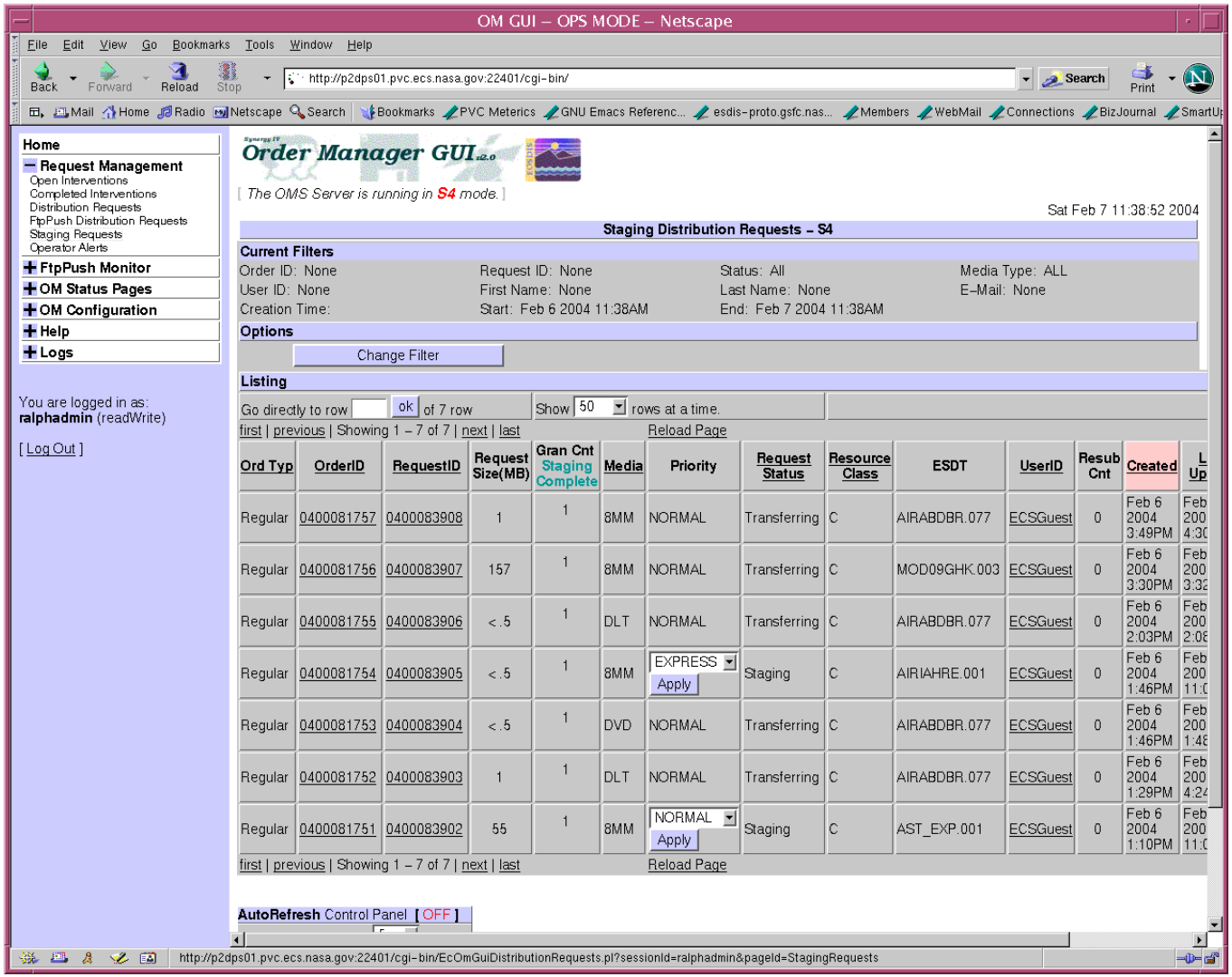
Monitoring/Controlling Order Manager Operations (Cont.)

- **Monitoring/Controlling Distribution Request Information on the OM GUI: Procedure (Cont.)**
  - **Perform associated procedures as necessary (Cont.):**
    - » **Viewing Open Intervention Information on the OM GUI**
    - » **Editing FtpPush Parameters**
    - » **Viewing Operator Alerts on the OM GUI**
    - » **Troubleshooting DDIST and Order Manager GUI Problems**
  - **Select the Staging Requests link (as necessary)**
    - » **Observe information displayed in the Listing table of the Staging Distribution Requests page**
  - **Select the FtpPush Distribution Requests link (as necessary)**
    - » **Observe information displayed in the Listing table of the FtpPush Distribution Requests page**

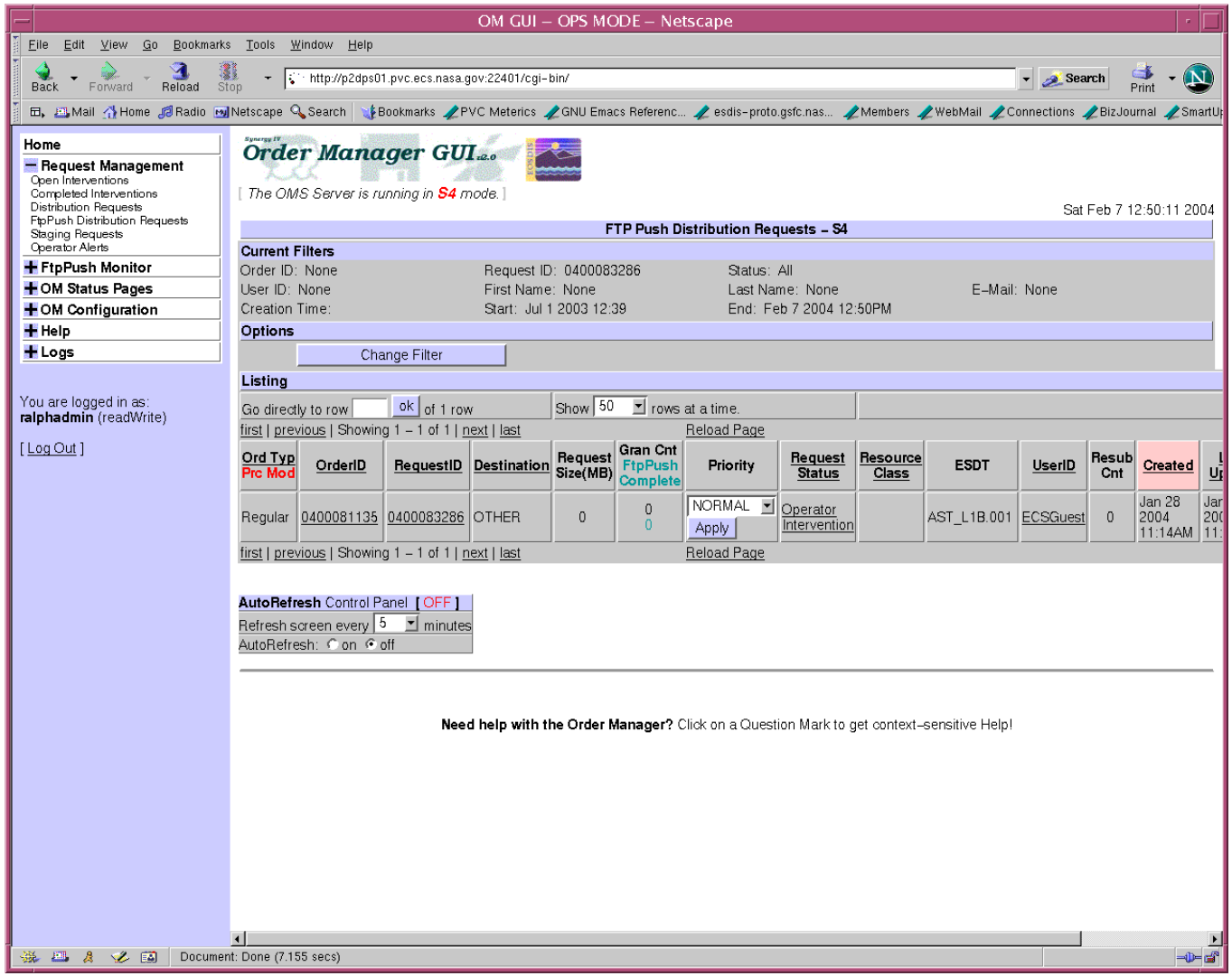
OM GUI: Distribution Requests Page



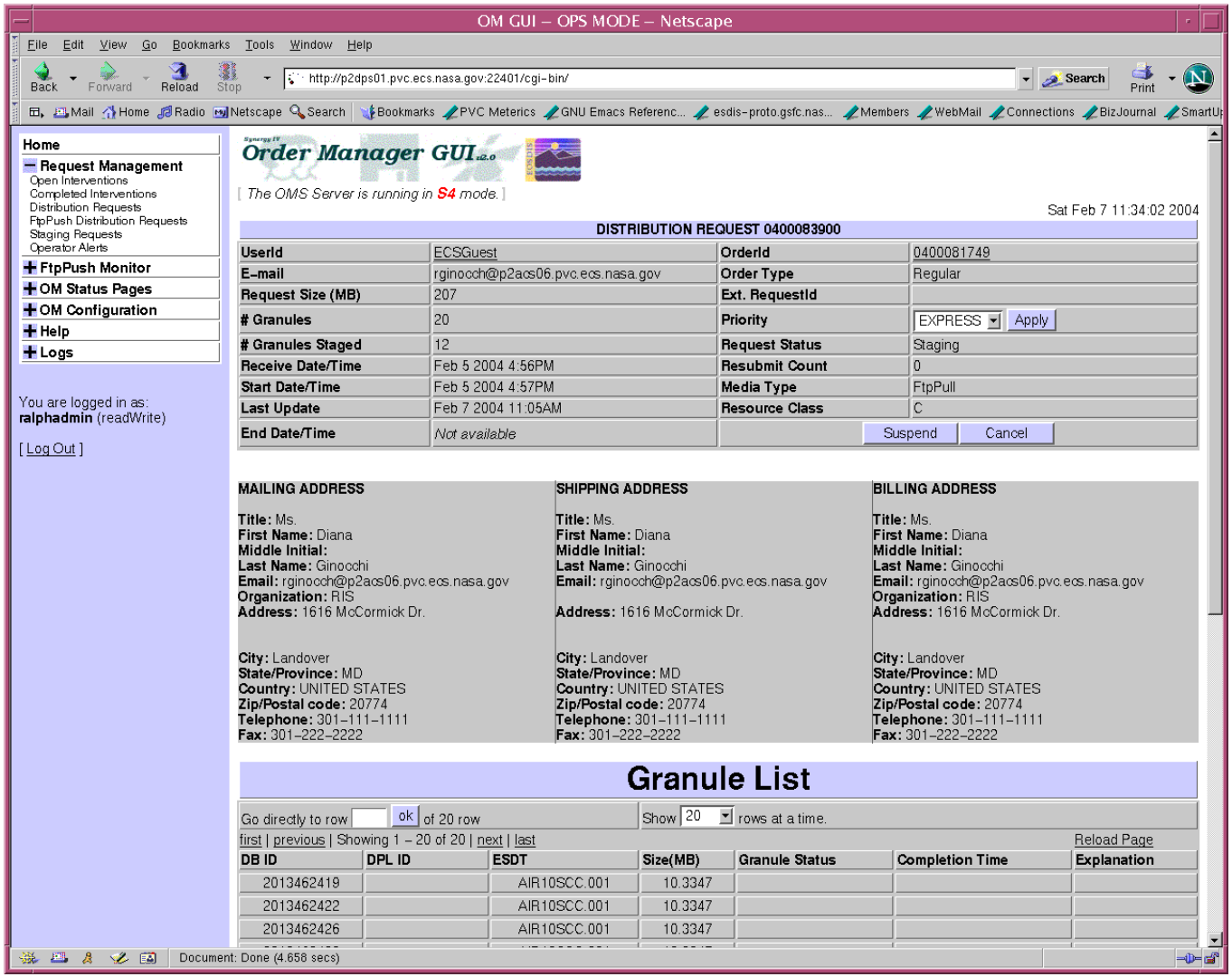
OM GUI: Staging Distribution Requests Page



OM GUI: FtpPush Distribution Requests



OM GUI: Distribution Request Detail Page



Monitoring/Controlling Order Manager Operations (Cont.)

- **Filtering Data Displayed on the Distribution Requests Screen**
  - **The Change Filter button in the Options area of the distribution requests pages provides the Distribution Technician (whether full-capability or limited capability operator) with a means of filtering data displayed on the screen**
    - » **By default, distribution requests are filtered by "creation time" within the last 24 hours are displayed at a time**
    - » **Changes made to the filter settings tend to persist, even from one session to another**
    - » **To restore the default filtering criteria, click on the Apply Defaults button in the filter pop-up window**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Filtering Data Displayed on the Distribution Requests Screen (Cont.)**
  - **The session ID provides a means of tracking which GUI pages are accessed and what filter options are used during a particular session**
    - » **The session ID is especially important when several operators are using the OM GUI at the same time**
    - » **For example, an individual operator's previously selected filter options can be retrieved from the session data so the filter options do not have to be reentered every time**

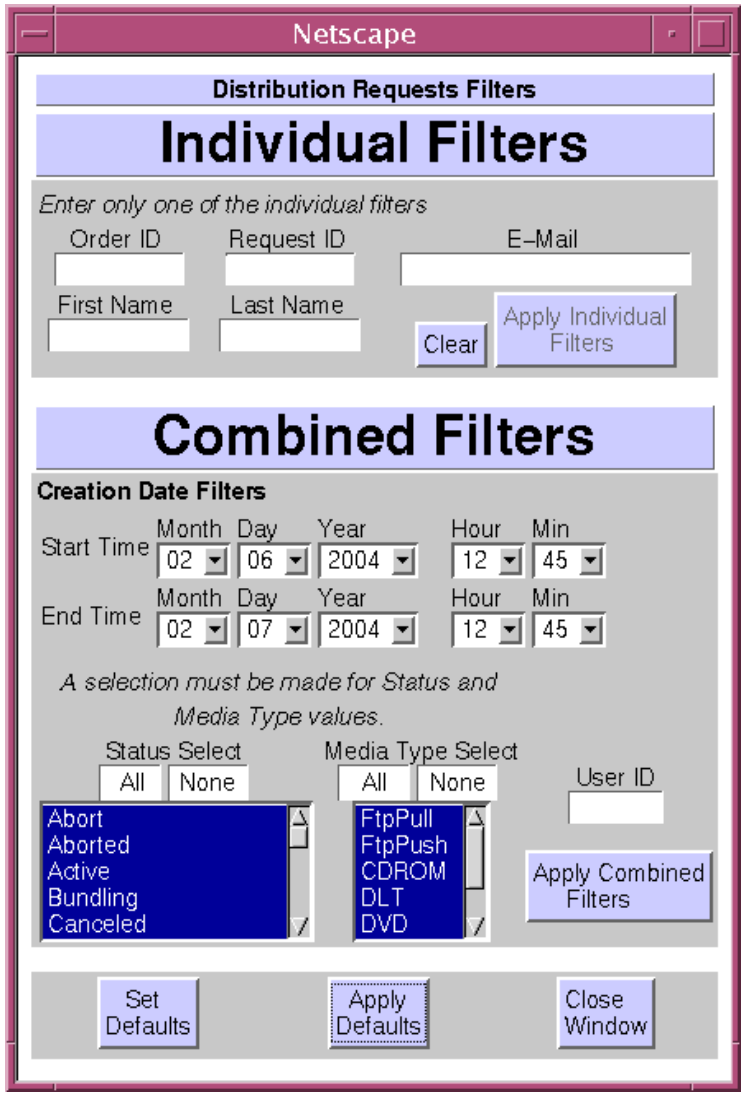
Monitoring/Controlling Order Manager Operations (Cont.)

- **Filtering Data Displayed on the Distribution Requests Screen: Procedure**
  - **Click on the Change Filter button in the Options area of the applicable distribution requests page**
  - **Select/specify filtering criteria for Individual Filters (as applicable)**
    - **Order ID**
    - **Request ID**
    - **E-Mail**
    - **First Name**
    - **Last Name**
  - **Click on the Apply Individual Filters button (if applicable)**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Filtering Data Displayed on the Distribution Requests Screen: Procedure (Cont.)**
  - **Select/specify Creation Time (Start Month, Start Day, Start Year, etc.) (as applicable)**
  - **Select/specify filtering criteria for Other Filters (as applicable)**
    - **[Request] Status**
    - **Media Type**
    - **User ID**
  - **Click on the Apply Combined Filters button (if applicable)**

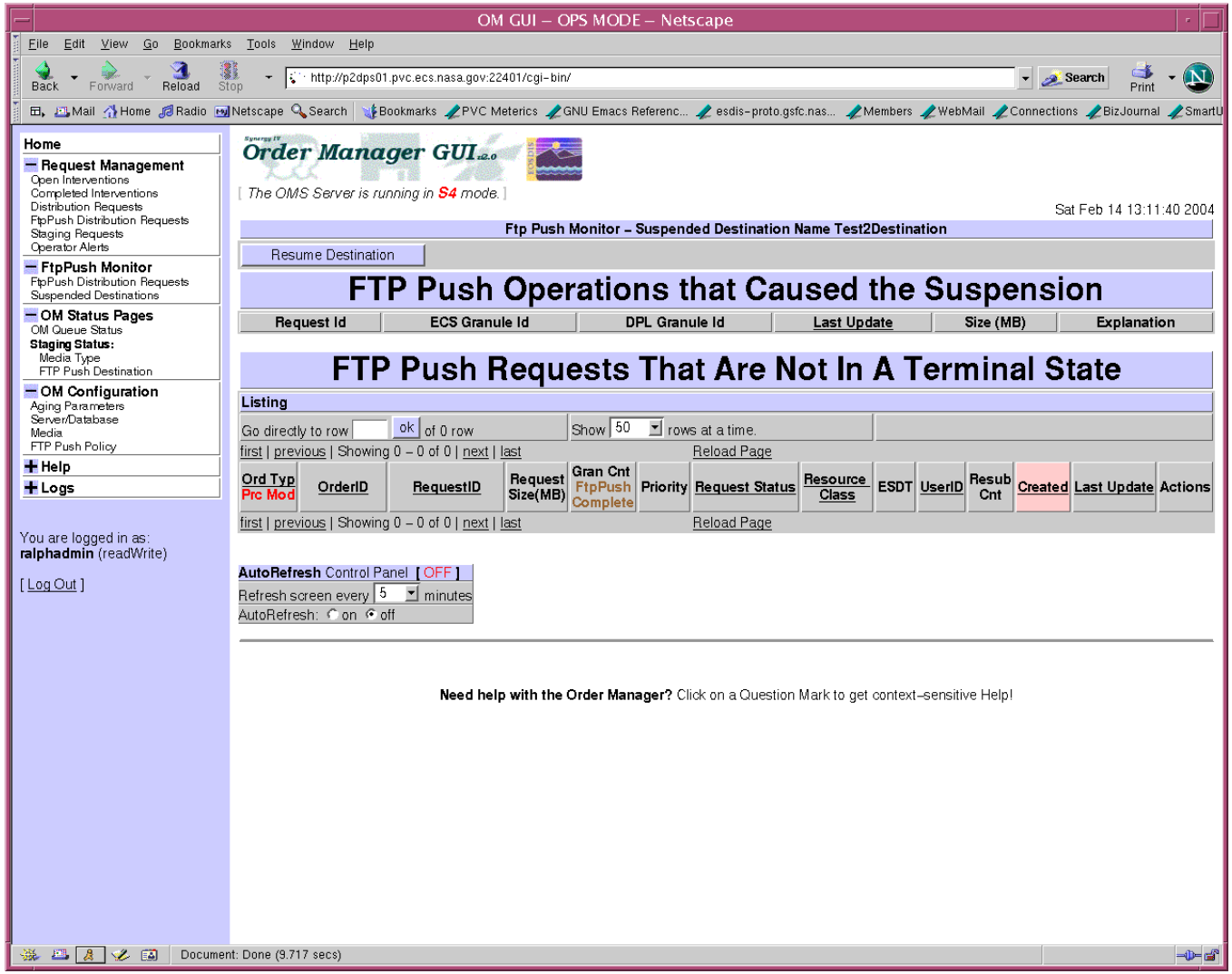
OM GUI: Distribution Requests Filters



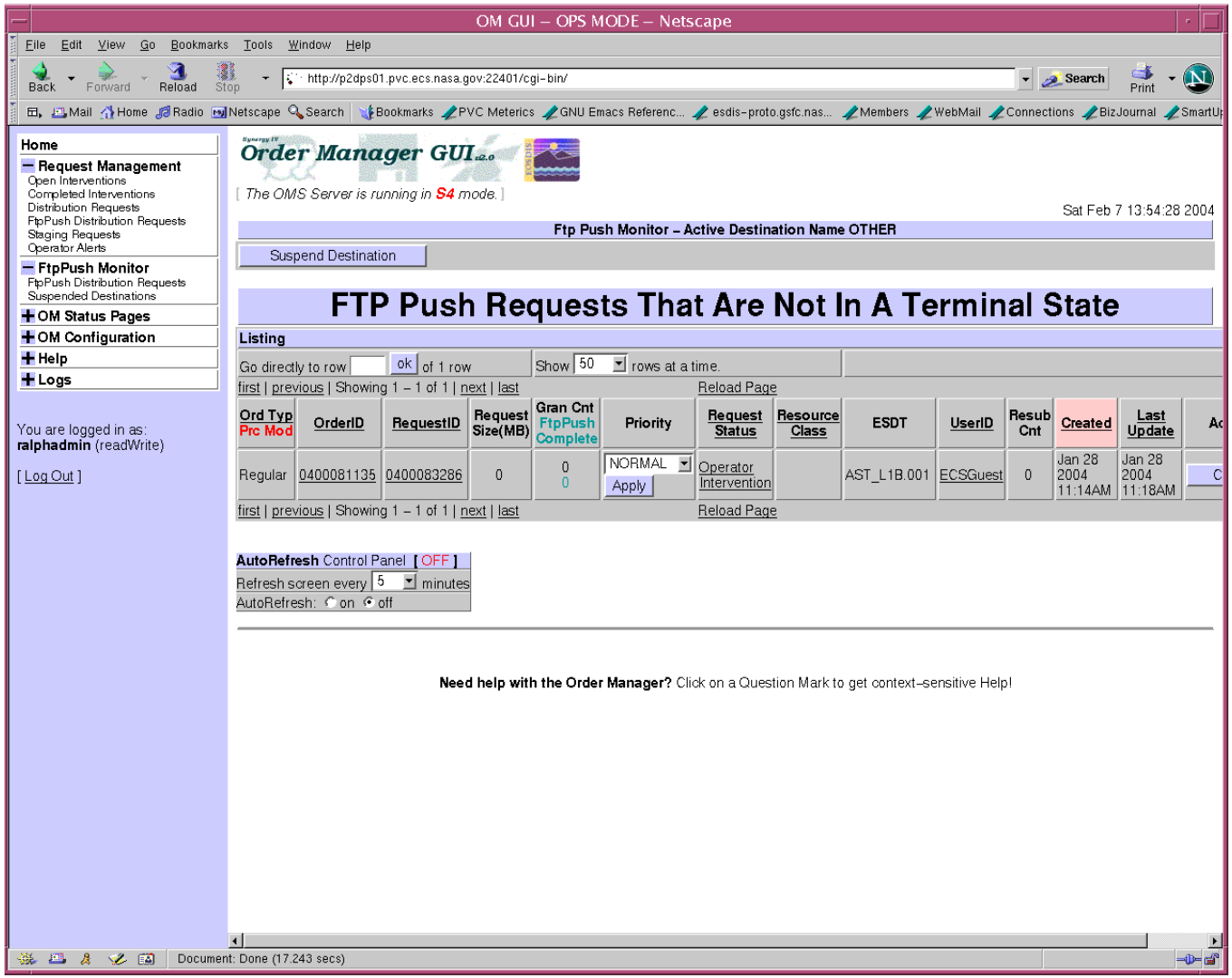
Monitoring/Controlling Order Manager Operations (Cont.)

- **Changing the Priority of a Distribution Request Using the OM GUI**
  - **The procedure for Changing the Priority of a Distribution Request Using the OM GUI is performed as part of the procedure for Monitoring/Controlling Distribution Request Information on the OM GUI**
  - **The priority of an S4 (Synergy IV) request can be changed while granules for the request still need to be staged or pushed**
  - **The Priority column in the Distribution Requests table of the distribution requests pages or the destination details pages on the OM GUI allows the full-capability operator to change the priority of distribution requests that are in a state that allows the priority to be changed**

OM GUI: Destination Details Page (Suspended Destination)



OM GUI: Destination Details Page (Active Destination)



Monitoring/Controlling Order Manager Operations (Cont.)

- **Changing the Priority of a Distribution Request Using the OM GUI (Cont.)**
  - **The Priority line of the Distribution Request Details page provides the full-capability operator with an alternative means of changing the priority of the particular distribution request**
  - **The limited-capability operator is not allowed to change the priority of distribution requests**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Changing the Priority of a Distribution Request Using the OM GUI: Procedure**
  - **Select the priority from the option button in the Priority column of the row associated with the request**
  - **Click on the associated Apply button**
    - » **“Priority changed”is displayed in the Priority column for the row associated with the request**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Suspending, Resuming, Canceling, or Resubmitting a Distribution Request Using the OM GUI**
  - **The Action column in the Distribution Requests table of the distribution requests pages or the destination details pages on the OM GUI provides the full-capability operator with a means of taking the following kinds of actions with respect to distribution requests:**
    - » **Suspend a request that still needs to be staged or while granules for the request still need to be pushed**
    - » **Resume a request that was suspended by the OM GUI operator or while the processing of new requests by the OMS is suspended**
    - » **Cancel a request that is not in a terminal state and while granules for the request still need to be staged or pushed**
    - » **Resubmit a request in a terminal state (e.g., aborted, cancelled, terminated, or shipped)**

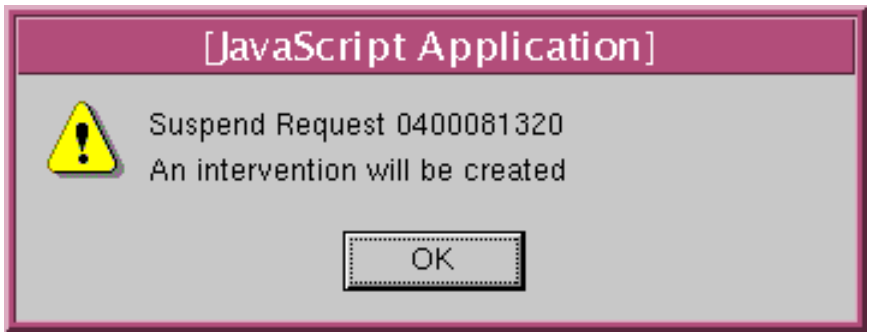
Monitoring/Controlling Order Manager Operations (Cont.)

- **Suspending, Resuming, Canceling, or Resubmitting a Distribution Request Using the OM GUI (Cont.)**
  - **The Distribution Request Details page provides the full-capability operator with an alternative means of taking the preceding kinds of actions with respect to a particular distribution request**
  - **The limited-capability operator is not allowed to suspend, resume, cancel, or resubmit distribution requests**

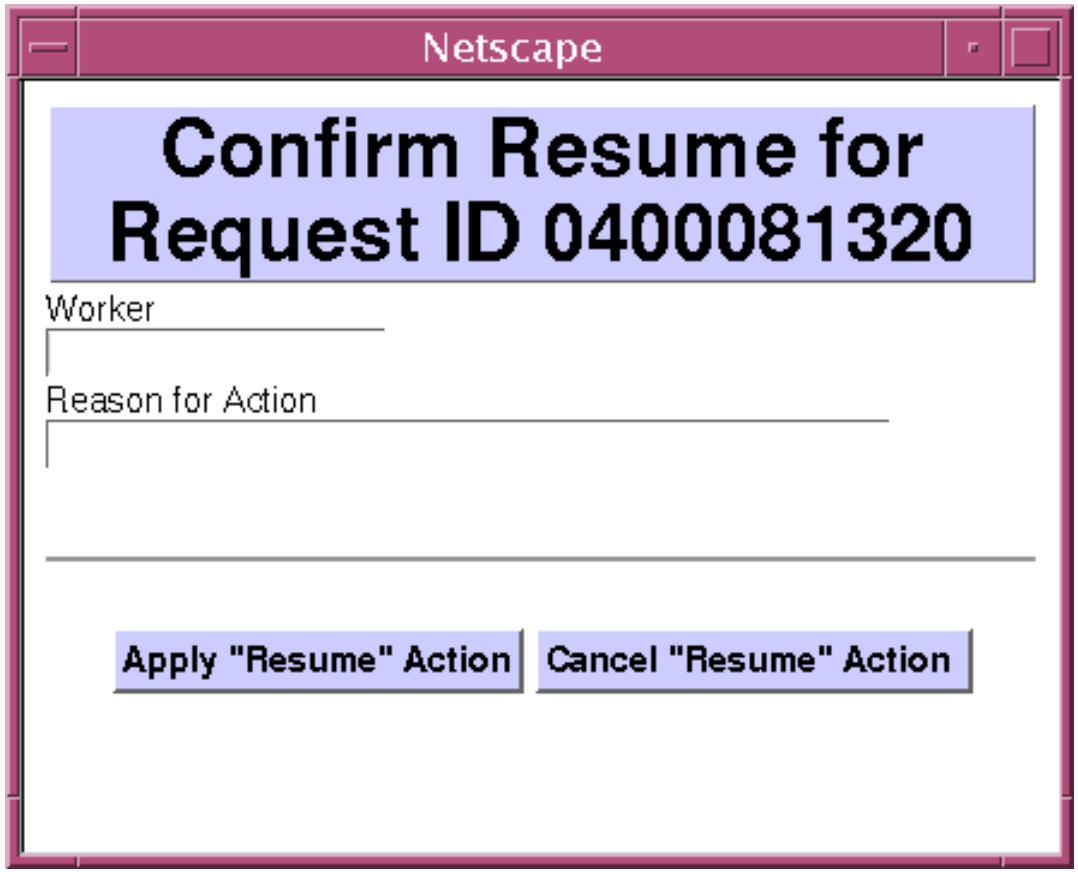
Monitoring/Controlling Order Manager Operations (Cont.)

- **Suspending, Resuming, Canceling, or Resubmitting a Distribution Request Using the OM GUI: Procedure**
  - **Click on the appropriate button in the Action column of the row associated with the request**
    - » **Buttons are available only for actions that are appropriate for the request**
  - **Respond to the applicable dialogue box**

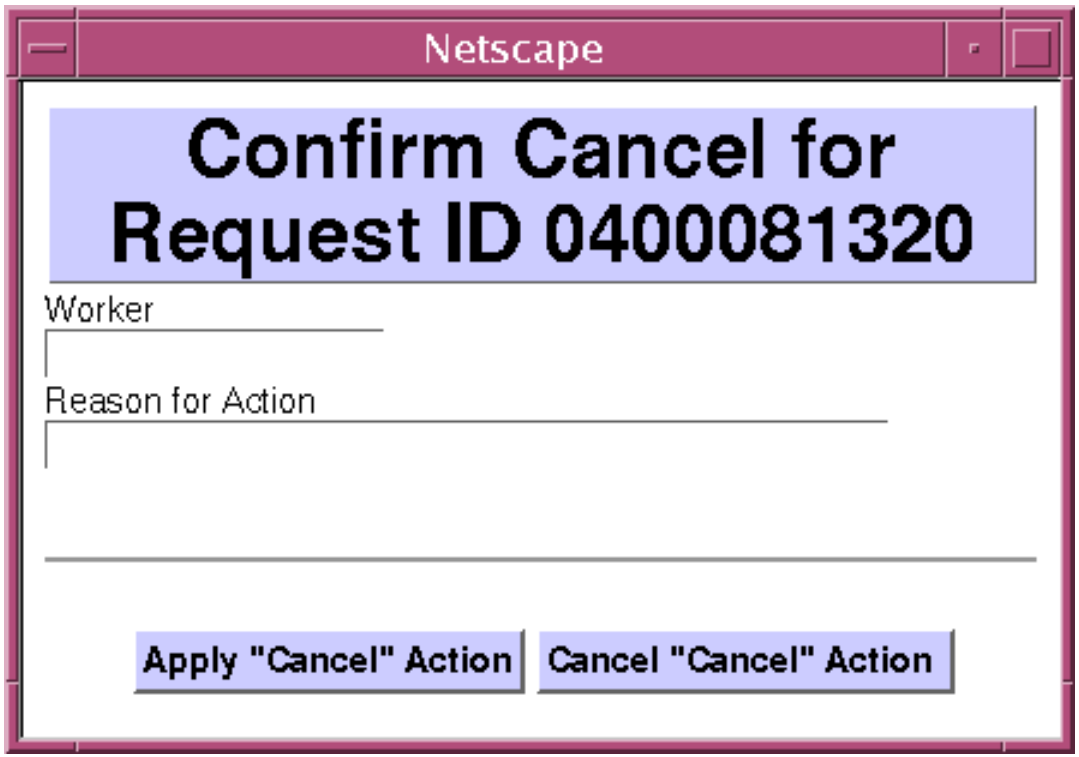
OM GUI: Suspend Request Dialogue Box



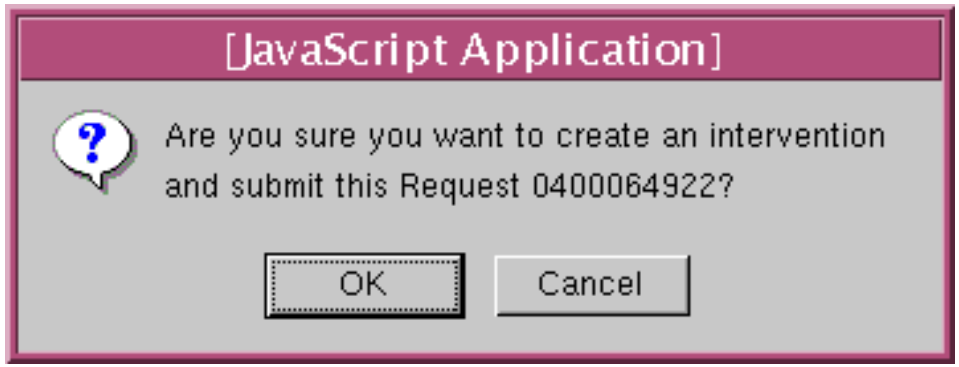
OM GUI: Resume Request Confirmation Dialogue Box



OM GUI: Cancel Request Confirmation Dialogue Box



OM GUI: Resubmit Request Confirmation Dialogue Box



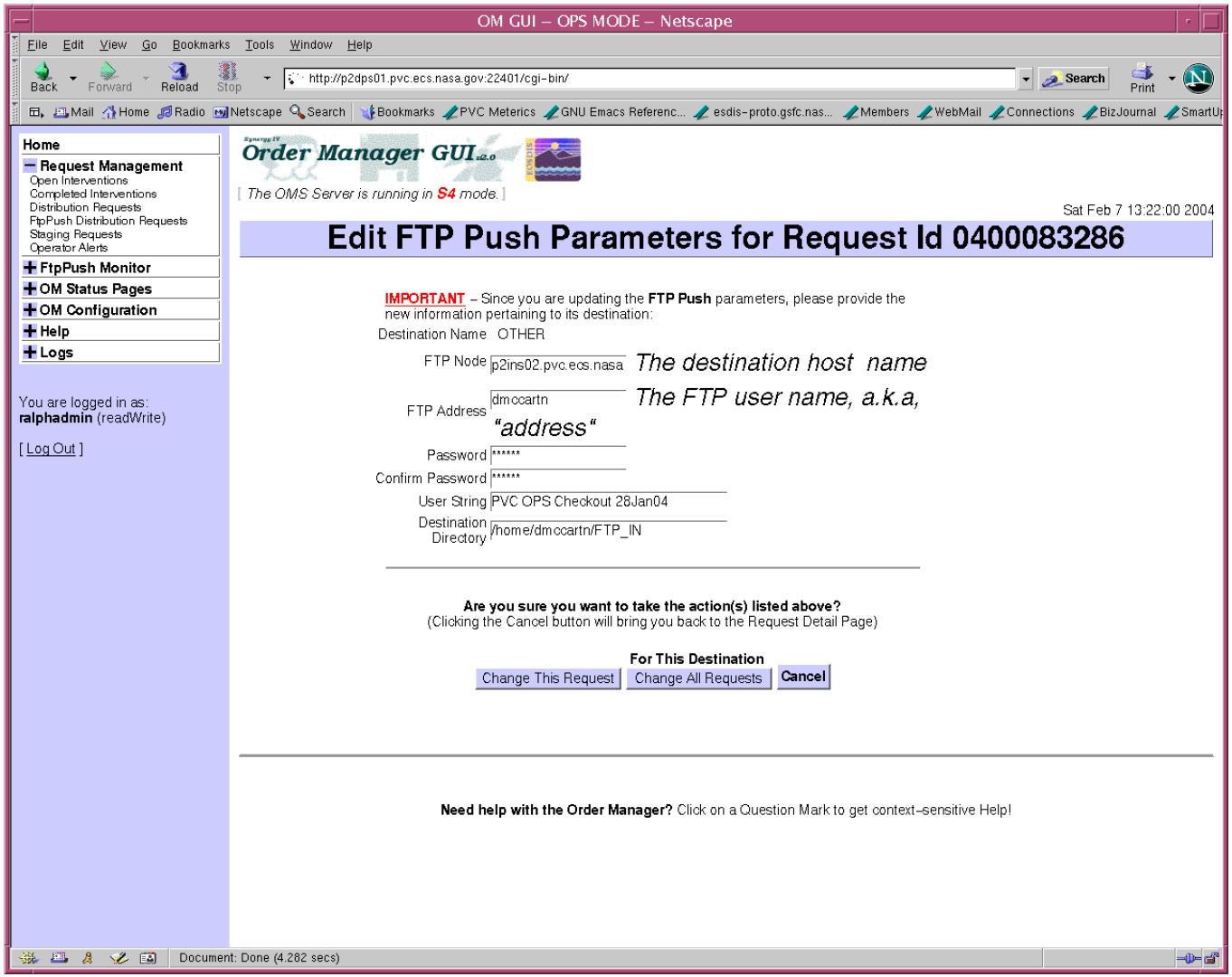
Monitoring/Controlling Order Manager Operations (Cont.)

- **Editing FtpPush Parameters**
  - The procedure for Editing FtpPush Parameters is performed as part of other procedures, for example…
    - » Responding to an Open Intervention
    - » Monitoring/Controlling Distribution Request Information on the OM GUI
  - The Edit FtpPush Parameters button on the Distribution Request Details page provides the full-capability operator with a means of editing the ftp push parameters for a particular distribution request
  - The limited-capability operator is not allowed to edit ftp push parameters for distribution requests using the OM GUI

Monitoring/Controlling Order Manager Operations (Cont.)

- **Editing FtpPush Parameters: Procedure**
  - Click on the applicable Request ID in the Distribution Requests table (if necessary)
  - Click on the Edit FtpPush Parameters button on the Distribution Request Detail page (if necessary)
  - Type appropriate values in the following text boxes (as necessary):
    - Ftp node [Destination host name]
    - Ftp Address [FTP user name]
    - Password
    - Confirm Password
    - User String [message to be sent to the user]
    - Destination Directory [full path]
  - Click on either the Change This Request button or the Change All Requests button (as applicable)

OM GUI: Edit FtpPush Parameters Page



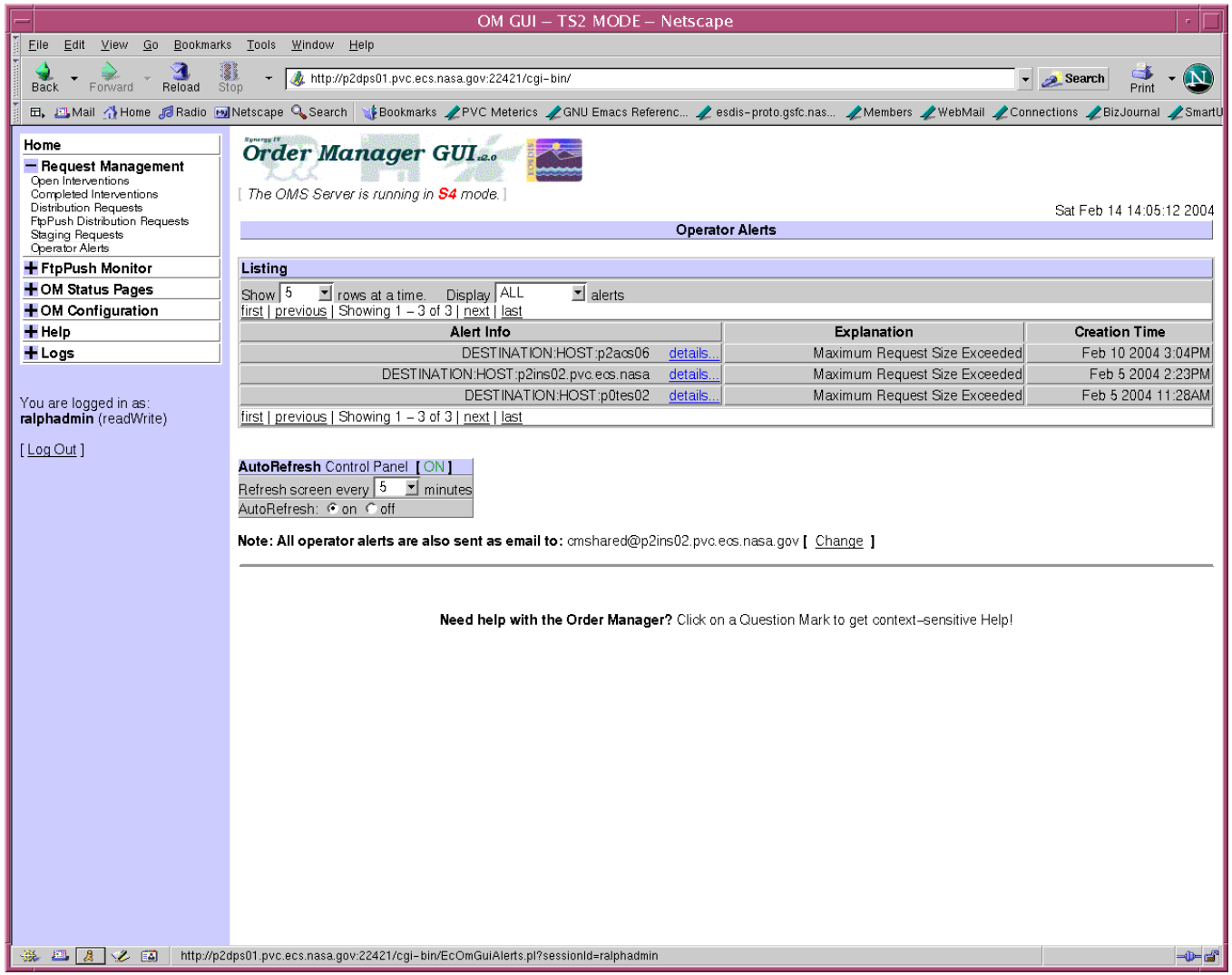
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing Operator Alerts on the OM GUI**
  - **"Alerts" are non-fatal warnings or errors that do not cause an Operator Intervention, but do provide valuable information concerning distribution resources**
    - » **For example: a suspended FTP Push destination**
  - **The Operator Alerts page provides the Distribution Technician (whether full-capability or limited capability operator) with a means of viewing operator alerts**
  - **Types of operator alerts:**
    - » **FTP Push Destination Alerts (problems with the destination not sufficient to cause an Operator Intervention)**
    - » **Data Pool File System Alerts**
    - » **Archive Server Alerts**
    - » **ECS Server Alerts (SDSRV or PDS errors)**

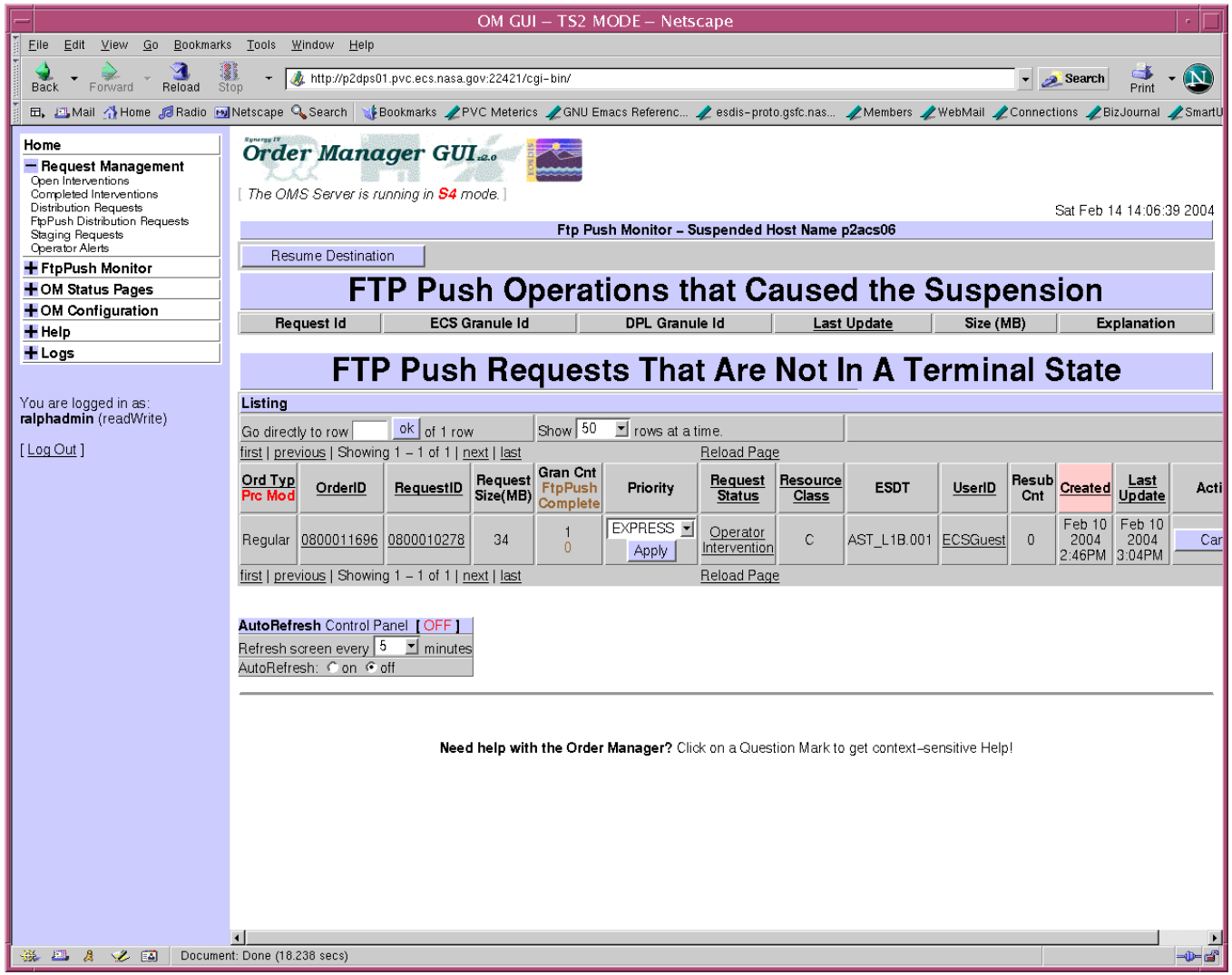
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing Operator Alerts on the OM GUI: Procedure**
  - **Click on the Operator Alerts link**
  - **Observe information displayed in the Listing table of the Operator Alerts page**
  - **To view detailed information concerning the cause and/or requests affected by the alert, click on the corresponding details link in the Alert Info column**

OM GUI: Operator Alerts Page



OM GUI: Suspended Host Detail Page



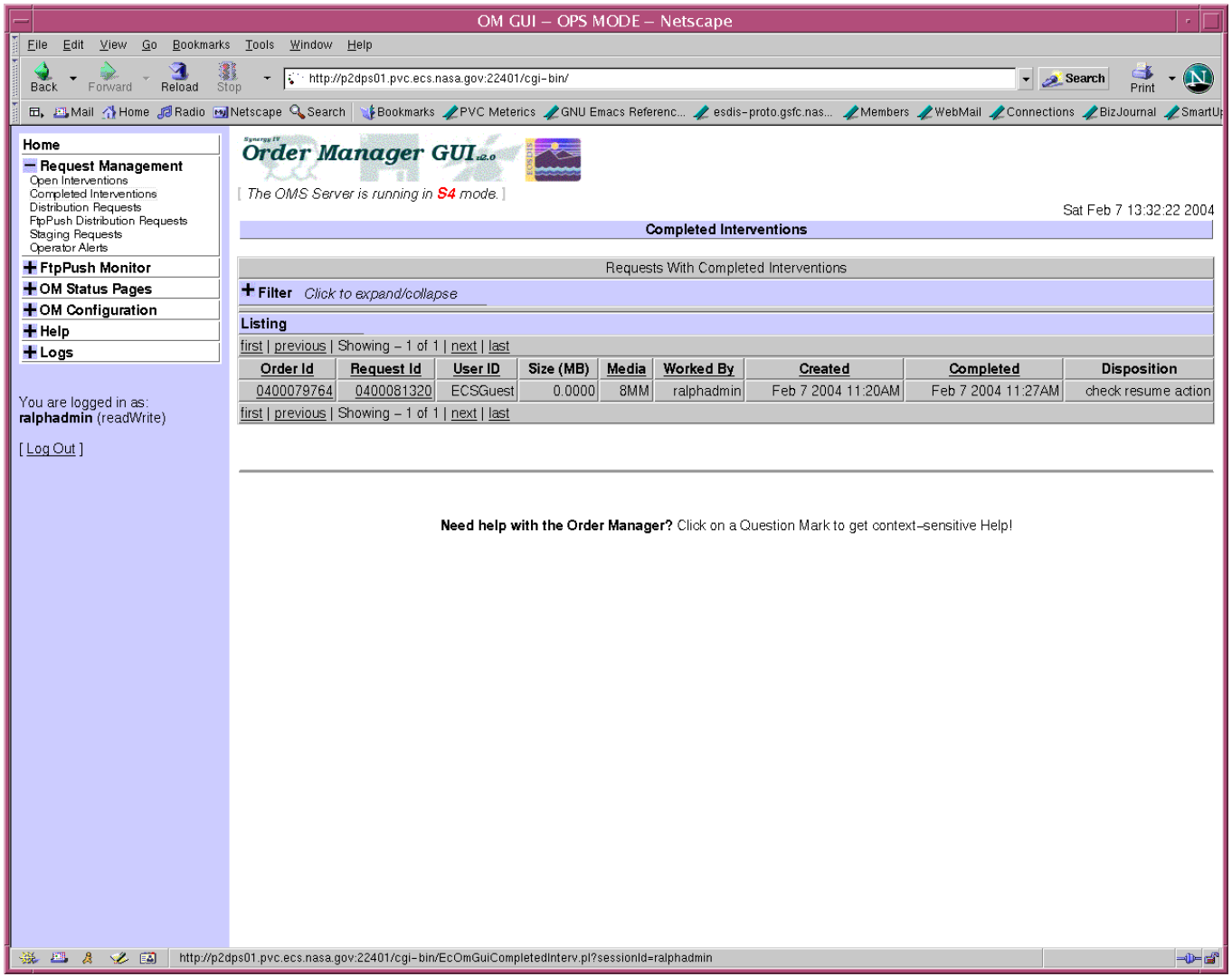
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing Completed Intervention Information on the OM GUI**
  - **The Completed Interventions page provides the Distribution Technician (whether full-capability or limited capability operator) with a means of viewing completed intervention information on the OM GUI**
  - **By default, data concerning up to 50 requests with completed interventions (and "creation time" within the last 24 hours) are displayed at a time**

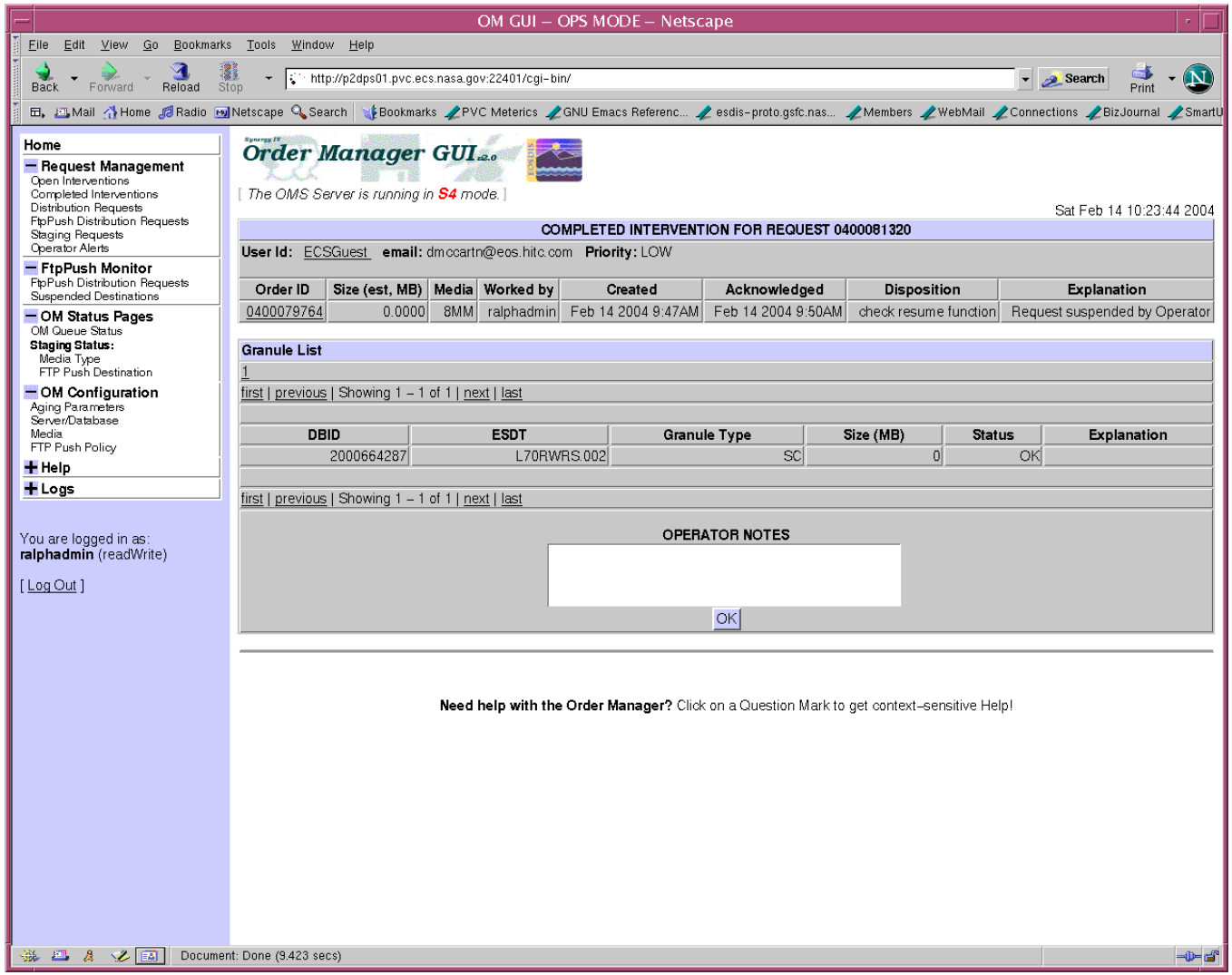
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing Completed Intervention Information on the OM GUI: Procedure**
  - **Click on the Request Management link**
  - **Click on the Completed Interventions link**
  - **Observe information displayed in the Listing table of the Completed Interventions page**
  - **Filter data displayed on the Completed Interventions page (if necessary)**
  - **Observe information displayed on the Completed Intervention Detail page**
  - **Click on a specific Request ID in the Requests with Completed Interventions table of the Request Management page Requests with Completed Interventions screen to bring up a screen containing more detailed data concerning that particular request**

OM GUI: Completed Interventions Page



OM GUI: Completed Intervention Detail Page



Monitoring/Controlling Order Manager Operations (Cont.)

- **Filtering Data Displayed on the Completed Interventions Page**
  - **Features at the top of the Completed Interventions page provide the Distribution Technician (whether full-capability or limited capability operator) with a means of filtering data displayed on the Completed Interventions page**
  - **The session ID provides a means of tracking which GUI pages are accessed and what filter options are used during a particular session**
    - » **The session ID is especially important when several operators are using the OM GUI in the same mode at the same time**
    - » **For example, an individual operator's previously selected filter options can be retrieved**

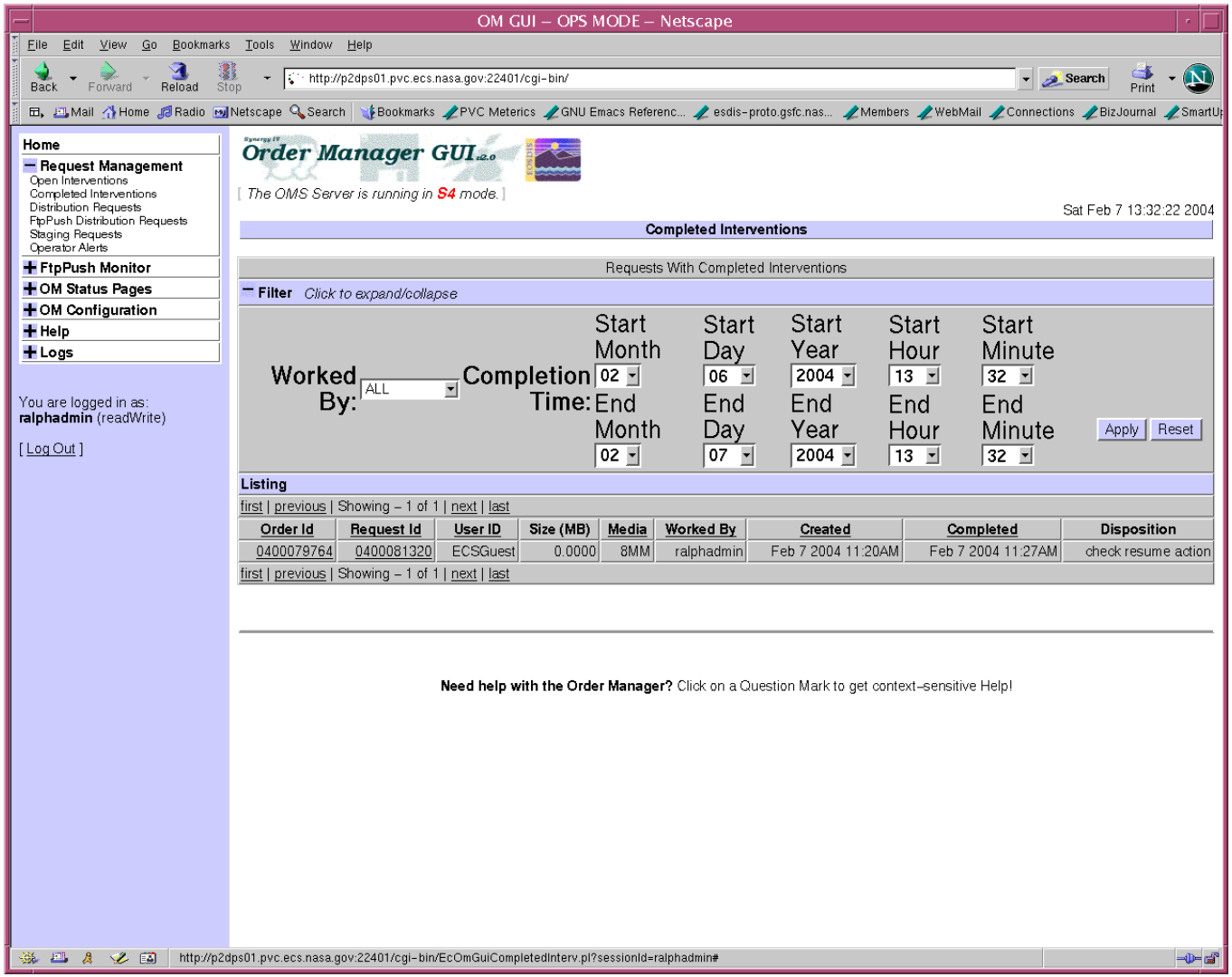
Monitoring/Controlling Order Manager Operations (Cont.)

- **Filtering Data Displayed on the Completed Interventions Page (Cont.)**
  - **By default, completed interventions are filtered by "completion time," providing access to all interventions completed within the last 24 hours**
  - **However, changes made to the filter settings tend to persist, even from one session to another**
  - **To restore the default filtering criteria click on the Reset button in the Filter area near the top of the Completed Interventions page**
  - **Completed interventions are not permanently available on the Completed Interventions page**
  - **If filtering does not cause data concerning the desired intervention(s) to be displayed, check the Delete Complete Interventions After parameter to see if the window of opportunity has already closed**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Filtering Data Displayed on the Completed Interventions Page (Cont.)**
- **Procedure**
  - **Select the filtering criteria (as applicable)**
    - » **Worked by**
    - » **Completion time**
  - **Click on the Apply button**

OM GUI: Completed Interventions (Filters Expanded)



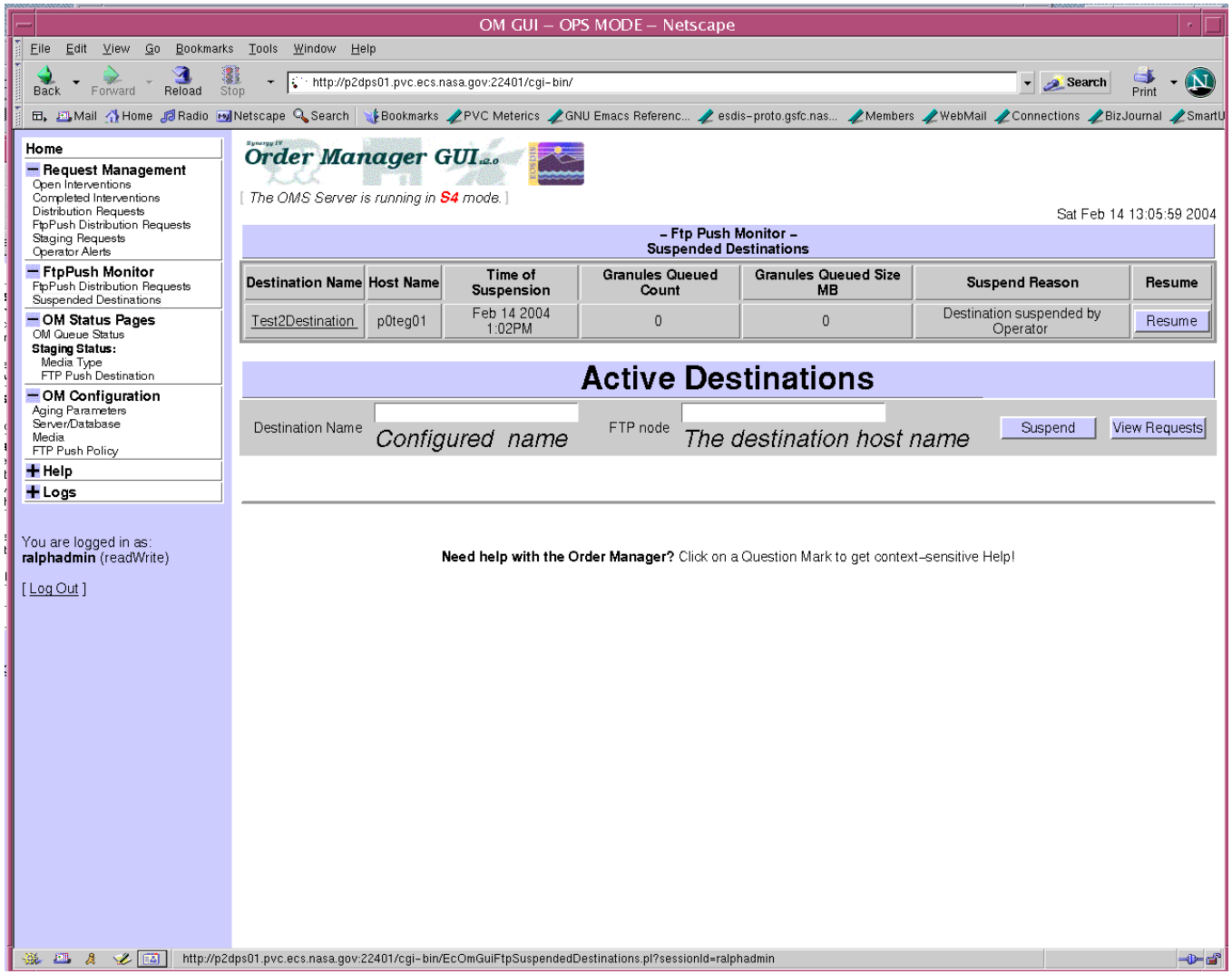
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing and Responding to Suspended FTP Push Distribution Destinations**
  - **The Suspended FTP Push Distribution Destinations page provides the full-capability operator with a means of viewing suspended FTP push destinations and a means of taking the following kinds of actions with respect to suspended FTP push destinations:**
    - » **Resume suspended destinations**
    - » **Suspend active destinations**
    - » **View details of active or suspended destinations**
  - **The limited-capability operator can use the Suspended FTP Push Distribution Destinations page to view suspended FTP push destinations but is not allowed to take action on (e.g., resume) suspended FTP push destinations**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing and Responding to Suspended FTP Push Distribution Destinations: Procedure**
  - **Click on the FtpPush Monitor link**
  - **Click on the Suspended Destinations link**
  - **Observe information displayed on the Suspended Destinations page**
  - **To resume a suspended destination click on the Resume button**
  - **To suspend an active destination or view destination details…**
    - » **Either type the destination name in the Destination Name text box or type the host name in the FTP Node text box**
    - » **To suspend an active destination click on the Suspend button**
    - » **To view ftp push requests associated with a destination click on the View Requests button**

OM GUI: Suspended Destinations Page



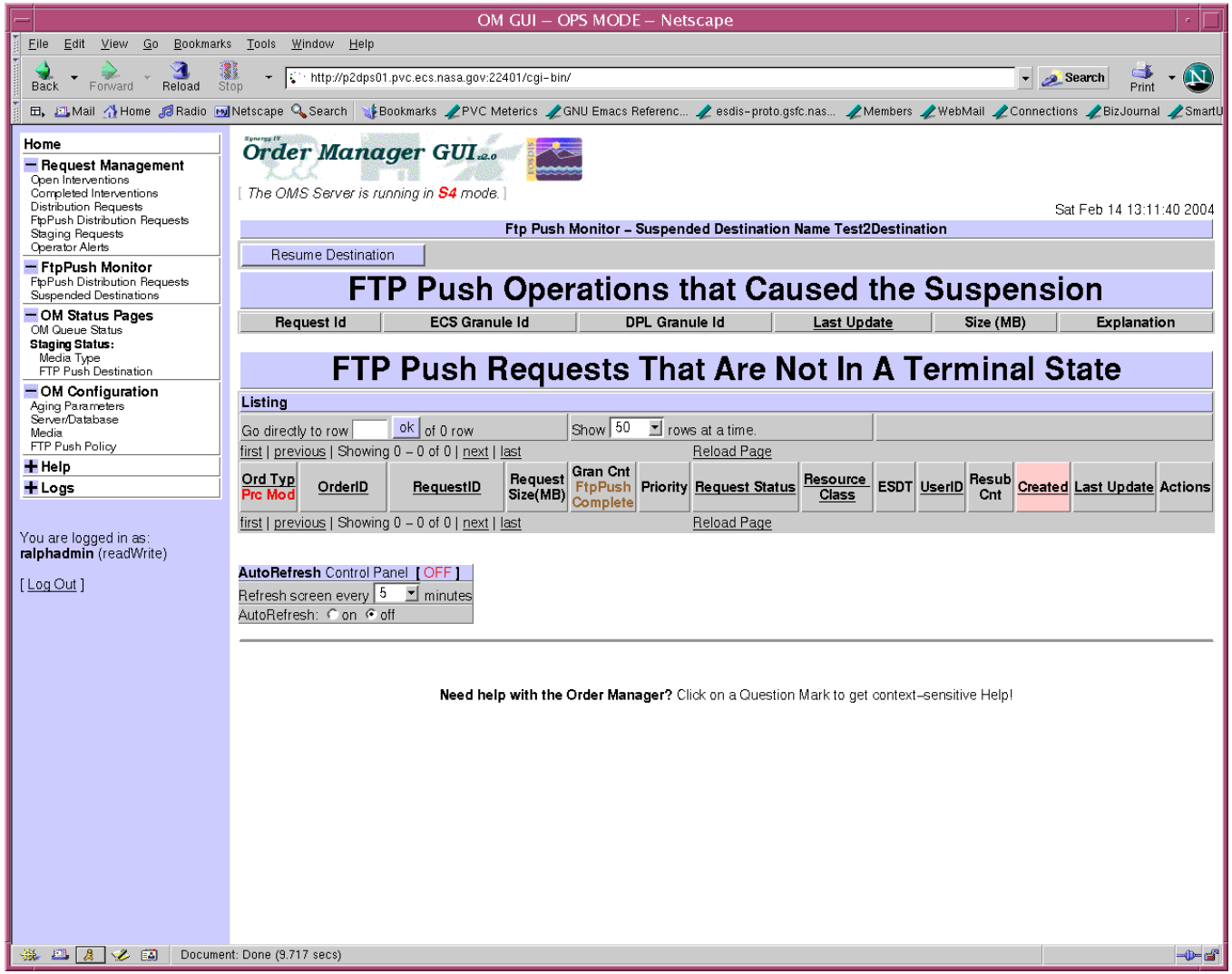
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing and Responding to Destination Details on the OM GUI**
  - **The Destination Details page provides the full-capability operator with a means of viewing detailed data concerning a particular destination and a means of taking the following kinds of actions:**
    - » **Suspend an active destination**
    - » **Resume a suspended destination**
    - » **Change the priority of a distribution request associated with the destination**
    - » **Suspend a request associated with the destination**
    - » **Resume a request associated with the destination**
    - » **Cancel a request associated with the destination**
  - **The limited-capability operator can use the Destinations page to view detailed data concerning destinations but is not allowed to take action on ftp push requests for any destination**

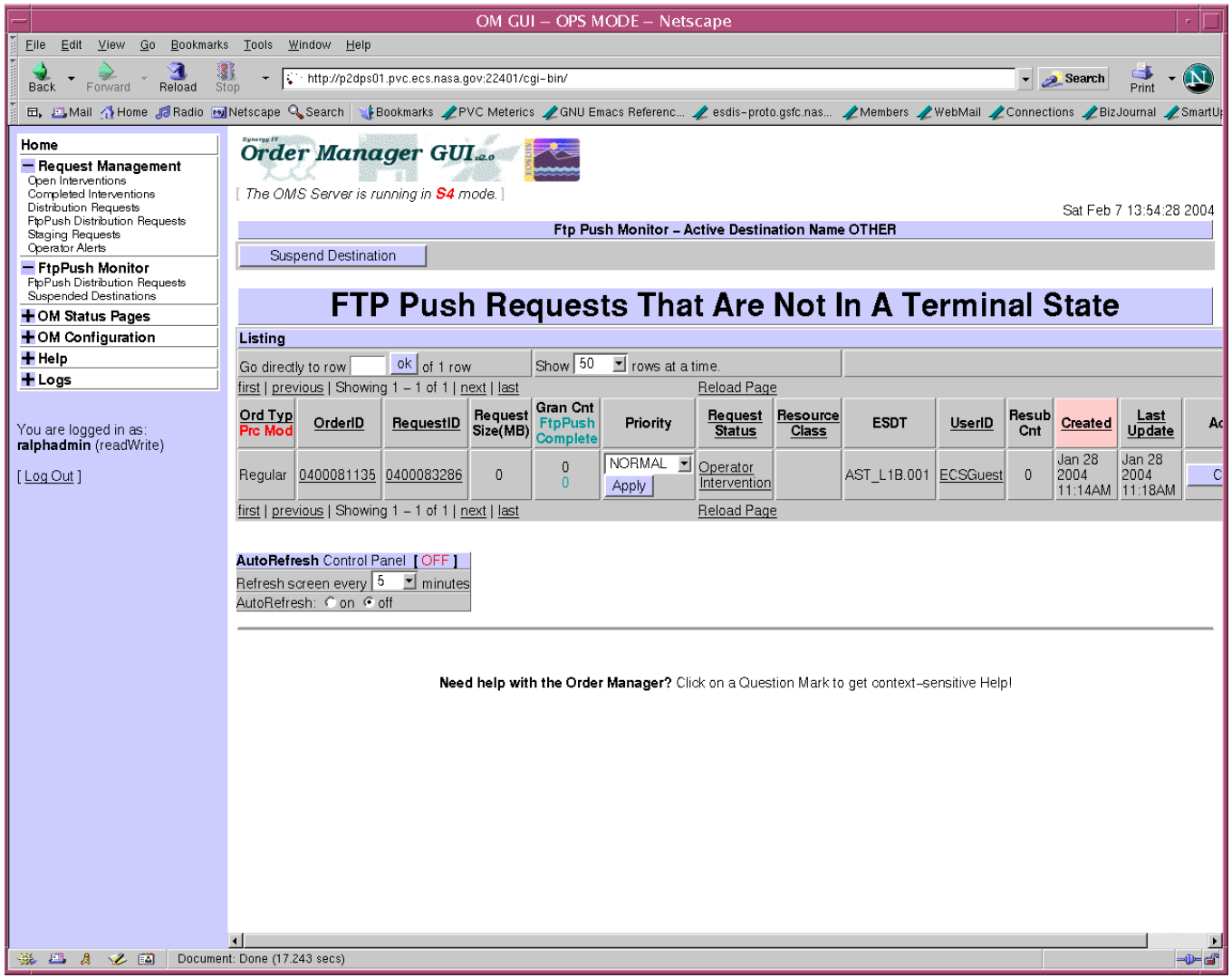
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing and Responding to Destination Details on the OM GUI: Procedure**
  - **Perform the procedure for Viewing and Responding to Suspended FTP Push Distribution Destinations to display the Destination Details page**
  - **Observe information displayed on the Suspended Destinations page**
  - **To suspend an active destination click on the Suspend Destination button**
  - **To resume a suspended destination click on the Resume Destination button**
  - **Perform the procedure for Suspending, Resuming, Canceling or Resubmitting a Distribution Request Using the OM GUI as necessary**

OM GUI: Destination Details Page (Suspended Destination)



OM GUI: Destination Details Page (Active Destination)



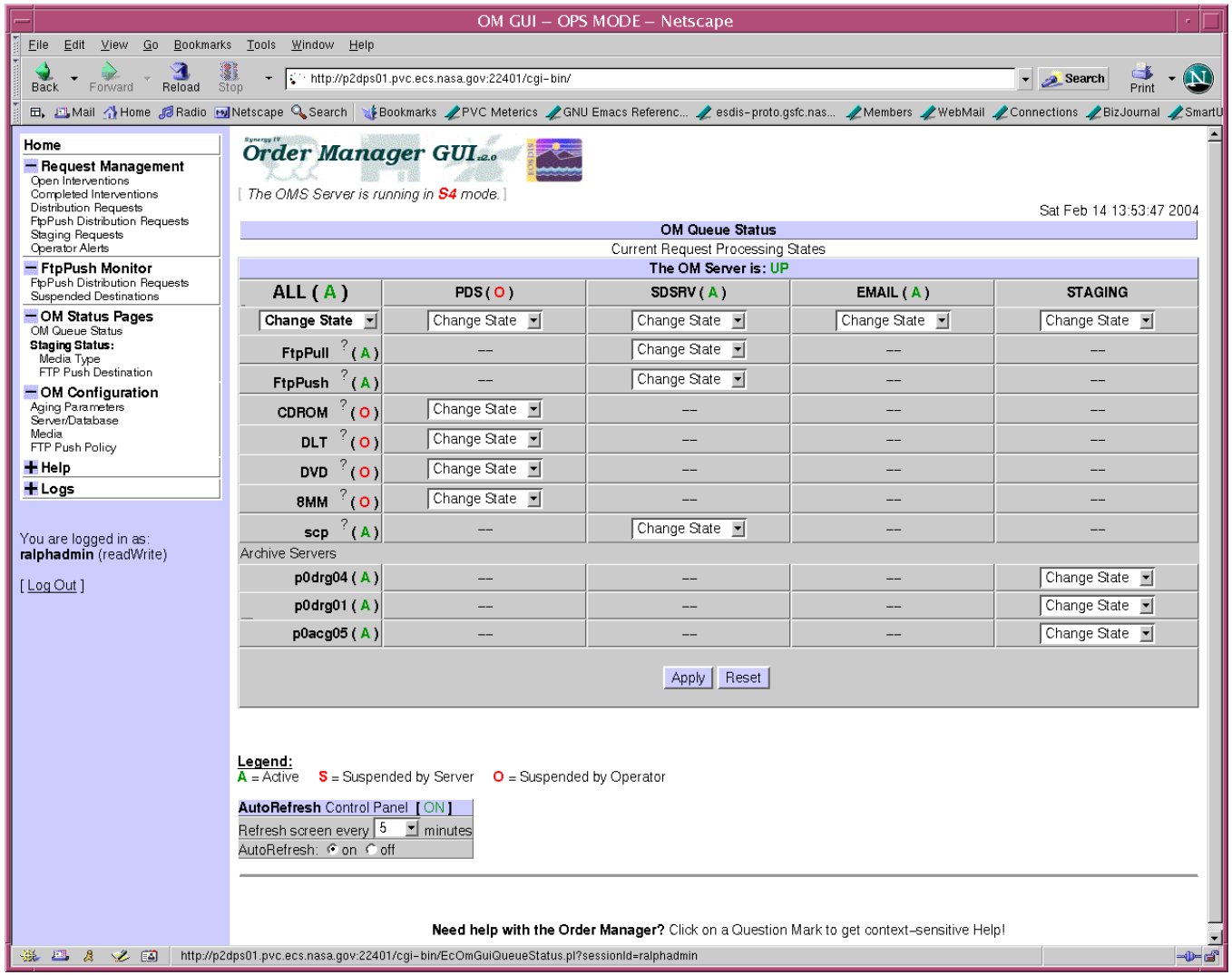
Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying OM Queue Status**
  - **The OM Queue Status page provides the full-capability operator with a means of checking and modifying OM queue status**
  - **The OM Queue Status page allows the full-capability operator to monitor and change the current status of request queues for all media as well as the request queues for PDS, SDSRV, e-mail, and staging**
  - **The limited-capability operator can monitor but cannot change the status of queues**
  - **In addition, the OM Queue Status page allows both full-capability and limited-capability operators to determine the status ("up" or "down") of the Order Manager Server**

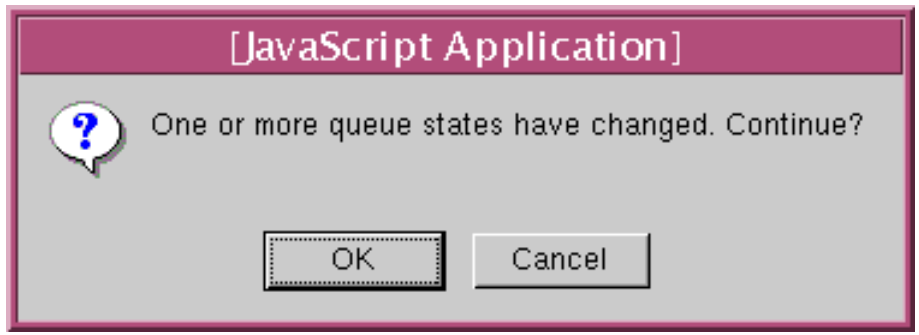
Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying OM Queue Status: Procedure**
  - **Click on the OM Status Pages link**
  - **Click on the OM Queue Status link**
  - **Observe information displayed in the Current Request Processing States table**
  - **To either activate or suspend all request queues…**
    - » **Select the appropriate state from the ALL [QUEUES] Change State option button**
    - » **Click on the Apply button**
  - **To change the state of a group of request queues or an individual request queue…**
    - » **Select the appropriate state from the corresponding Change State option button**
    - » **Click on the Apply button**

OM GUI: OM Queue Status Page



OM GUI: OM Queue Status Change Confirmation Dialogue Box



Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking Staging Status**
  - **The two Staging Status pages provide the Distribution Technician (whether full-capability or limited capability operator) with means of checking staging status in either of two ways; i.e., by….**
    - » **Media Type**
    - » **FTP Push Destination**
  - **The Staging Status pages allow the Distribution Technician to monitor the number of granules and data volume currently in staging (in four categories):**
    - » **Granules waiting for staging**
    - » **Granules in staging**
    - » **Granules that have been staged but not yet shipped**
    - » **Granules that have been staged and shipped**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking Staging Status (Cont.)**
  - In addition to the granule information, the data low and high water marks are shown on the Staging Status pages
  - DHWM (Data High Water Mark)
    - » Maximum volume of data in staging or already staged but not yet shipped
    - » If the data volume and number of requests is above the DHWM, it is assumed the media devices have plenty of work to keep them busy
  - DLWM (Data Low Water Mark)
    - » Minimum volume of data that should be in staging or already staged but not yet shipped
    - » If the data volume is below the DLWM, the media devices may soon become idle

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking Staging Status (Cont.)**
  - **In general it is a good idea to keep the amount of work that is in staging or staged just below the high water mark of each output queue**
    - » **This achieves a good balance among ftp output connections (or physical media output devices)**
  - **The data high water marks can be exceeded in the interest of optimizing the use of the archive drives or to get high priority work through distribution quickly**
    - » **For example, an idle archive would be dispatched even if it means exceeding the DHWM**

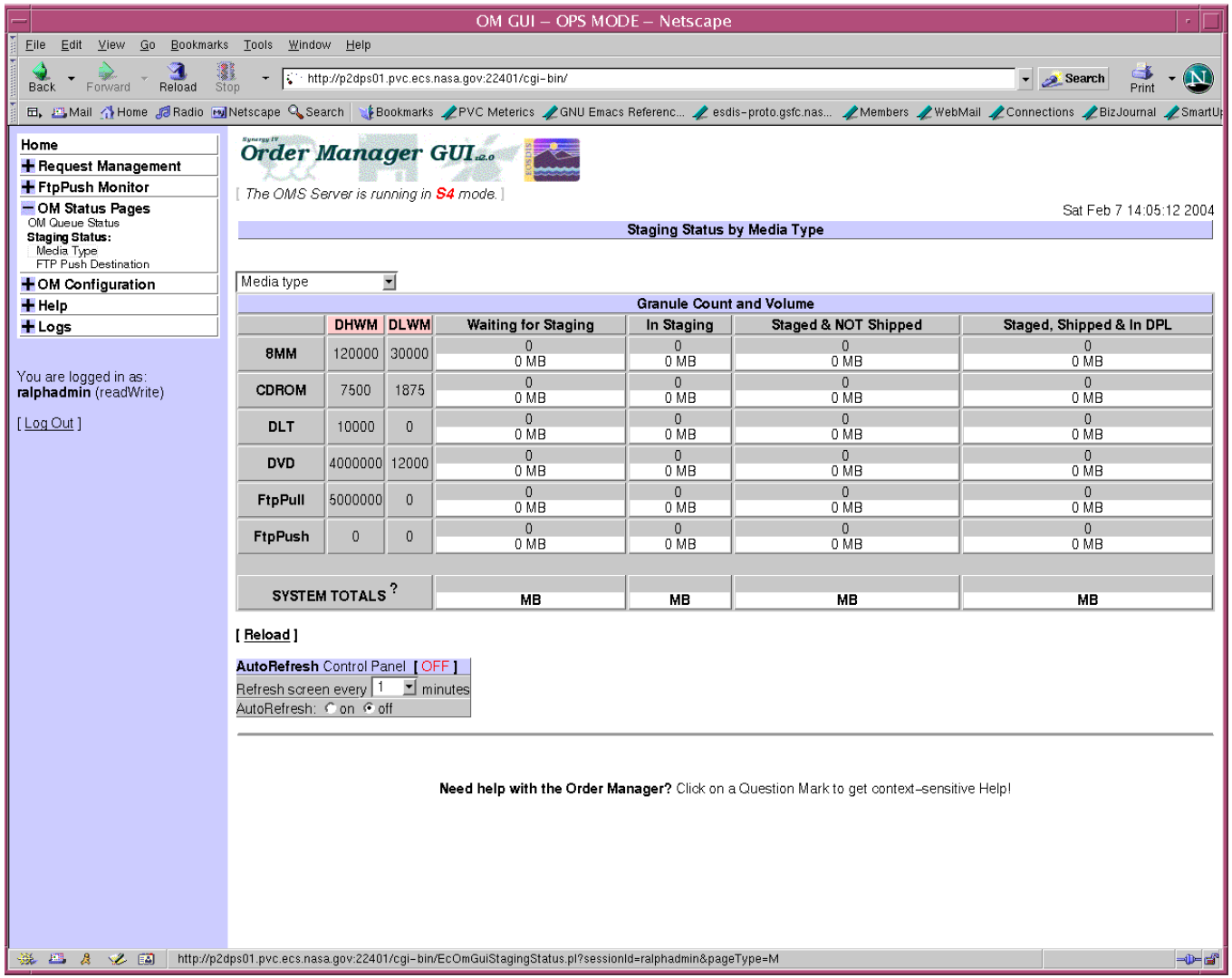
Monitoring/Controlling Order Manager Operations (Cont.)

- Checking Staging Status (Cont.)
  - The DLWM is used mainly for dispatching high-priority work
    - » Since it is a good idea to keep the queues at their high water marks, generally the output queues should be fairly full
    - » As a result, a high-priority request might have to wait until some of the data gets worked off and the queue falls below that high water mark
    - » But high-priority requests should go through at a fast pace

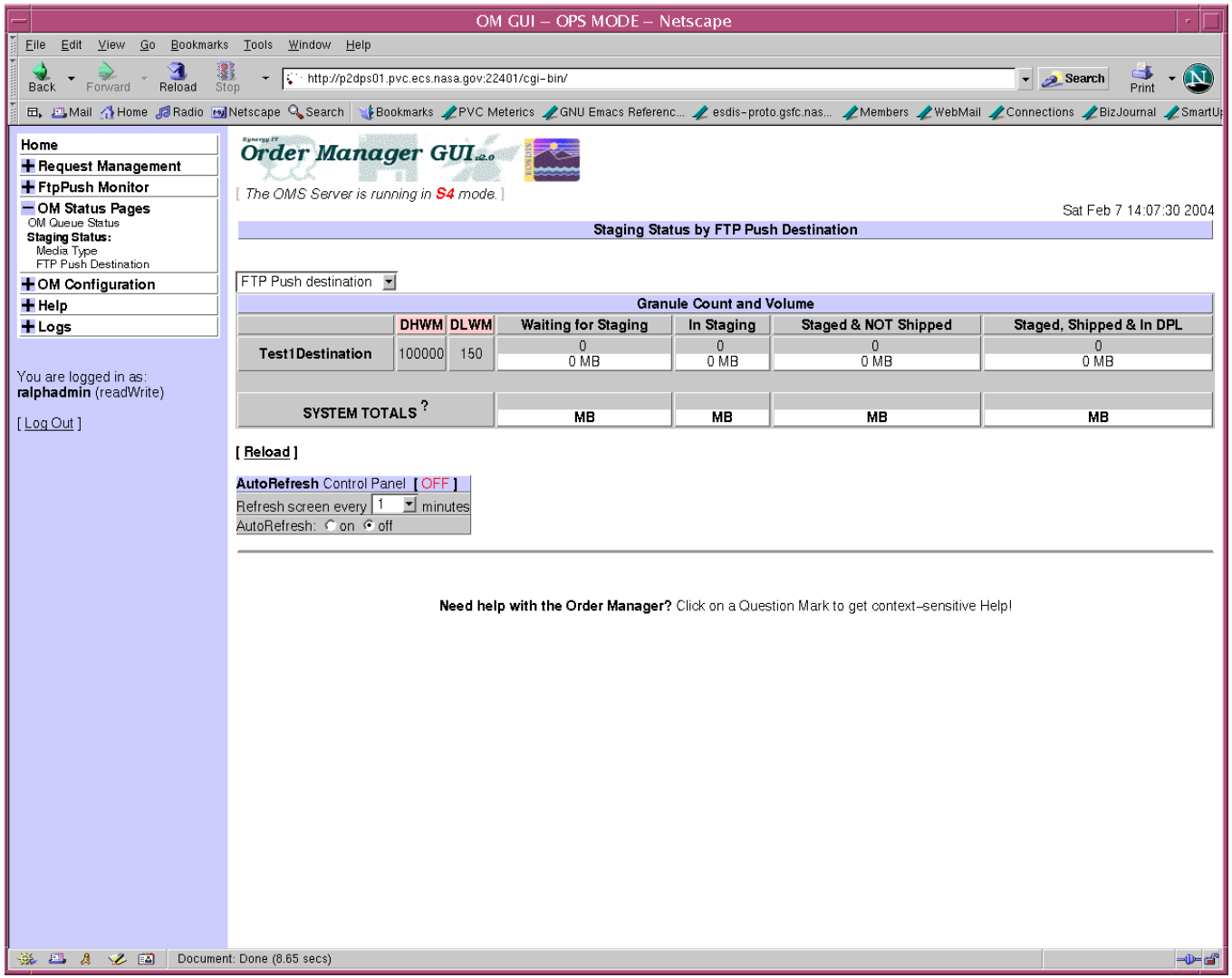
Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking Staging Status: Procedure**
  - Click on the OM Status Pages link
  - To display staging status by media type, Click on the Media Type link
  - Observe information displayed on the Staging Status page
  - To display staging status by ftp push destination, click on the FTP Push Destination link
  - Observe information displayed on the Staging Status page
  - To check or modify OM queue status go to the procedure for Checking/Modifying OM Queue Status

OM GUI: Staging Status by Media Type Page



OM GUI: Staging Status by FTP Push Destination Page



Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying OM Configuration Parameters**
  - **The OM Configuration pages provide the full-capability operator with a means of checking and modifying (if necessary) the values assigned to the following types of OM configuration parameters:**
    - » **Aging Parameters**
    - » **OM Server Parameters**
    - » **OM Database Parameters**
    - » **Media Parameters**
    - » **FTP Push Policy**
  - **The limited-capability operator can use the OM Configuration page to view the values assigned to OM configuration parameters but is not allowed to change any parameters**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying Aging Parameters**
  - The Aging Parameters page provides the full-capability operator with a means of checking and modifying aging parameters
  - The limited-capability operator can check but is not allowed to change any aging parameters
  - Aging parameters affect how Distribution Requests are aged over time
  - The following two aging parameters are configurable for each ECS Priority Level (i.e., XPRESS, VHIGH, HIGH, NORMAL, or LOW):
    - » Age Step
    - » Maximum Priority

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying Aging Parameters (Cont.)**
  - **Age Step is the aging rate by which the effective priority of a request increases for every hour it has been waiting**
    - » **Range is 0-100, including decimal fractions**
    - » **If the parameter is set to zero (0), waiting requests never increase in priority**
    - » **For example, if the Age Step is set to 5.5 and a request with an initial priority of 100 waits 10 hours to be pushed, the request increases in priority by a factor of 5.5 every hour until it has been delivered:**

      Hour 0: priority = 100
      Hour 1: priority = 105.5
      Hour 2: priority = 111
      .
      .
      .
      Hour 10: priority = 155

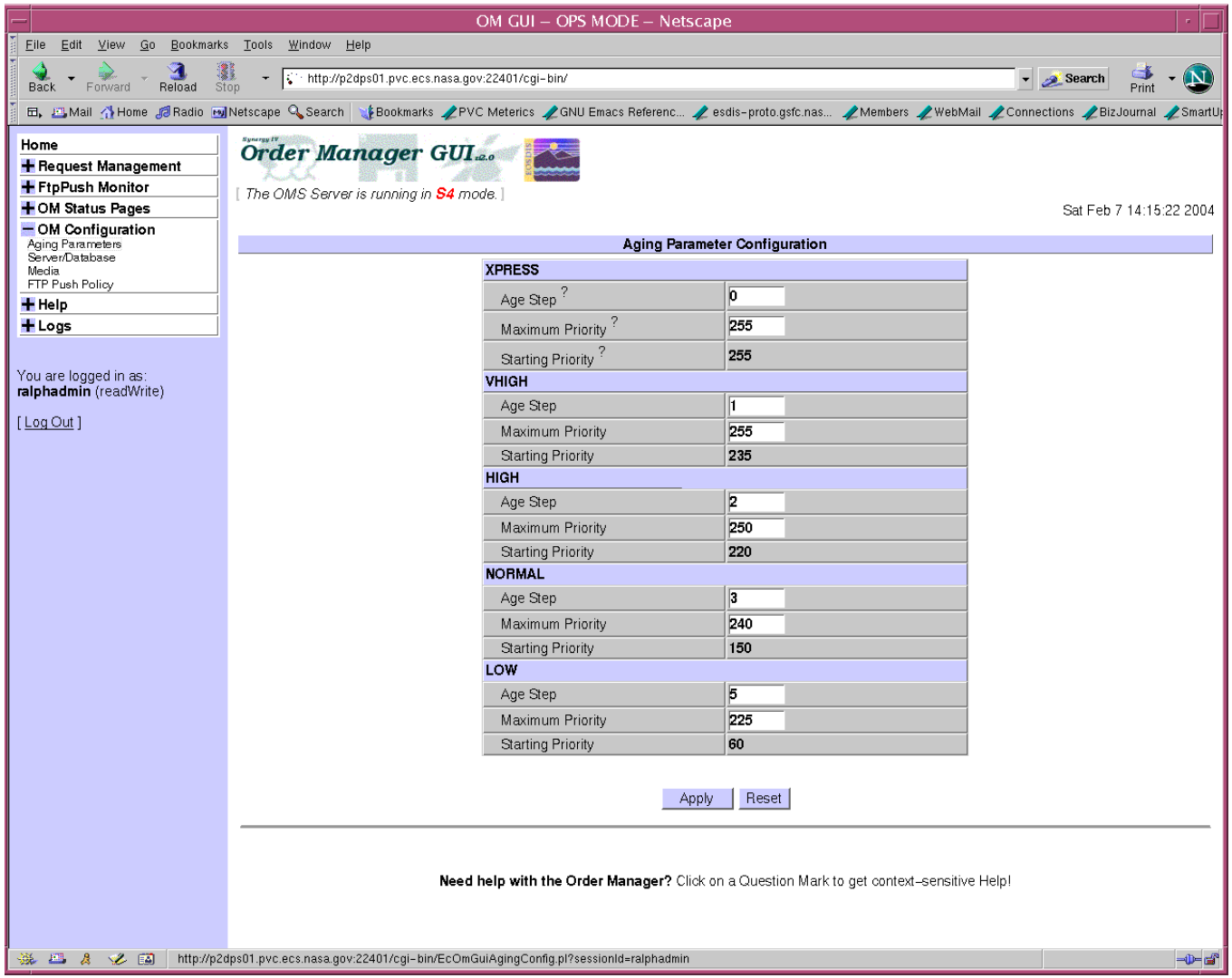
Monitoring/Controlling Order Manager Operations (Cont.)

- Checking/Modifying Aging Parameters (Cont.)
  - Maximum Priority is the maximum priority a request can attain through the aging process
    - » For example, if Maximum Priority were set to 130, once the request had reached a priority of 130, it would not go any higher
    - » If a Maximum Priority of 130 were applied to the previous example, at Hour 6 the priority would become 130 and at every hour thereafter (if not delivered) it would still be 130

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying Aging Parameters: Procedure**
  - **Click on the OM Configuration link**
  - **Click on the Aging Parameters link**
  - **Observe information displayed on the Aging Parameters page**
  - **To modify Aging Parameter value(s)…**
    - » **Enter the new value(s) in the text entry box(es) for the relevant parameter(s)**
    - » **Click on the Apply button**

OM GUI: Aging Parameters Page



Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying OMS Server or Database Parameters**
  - **The OMS Server and Database Configuration page provides the full-capability operator with a means of checking and modifying OMS server or database parameters**
  - **The limited-capability operator can check but is not allowed to change any OMS server or database parameters**
  - **OMS server and database parameters affect how the OM server and database run**

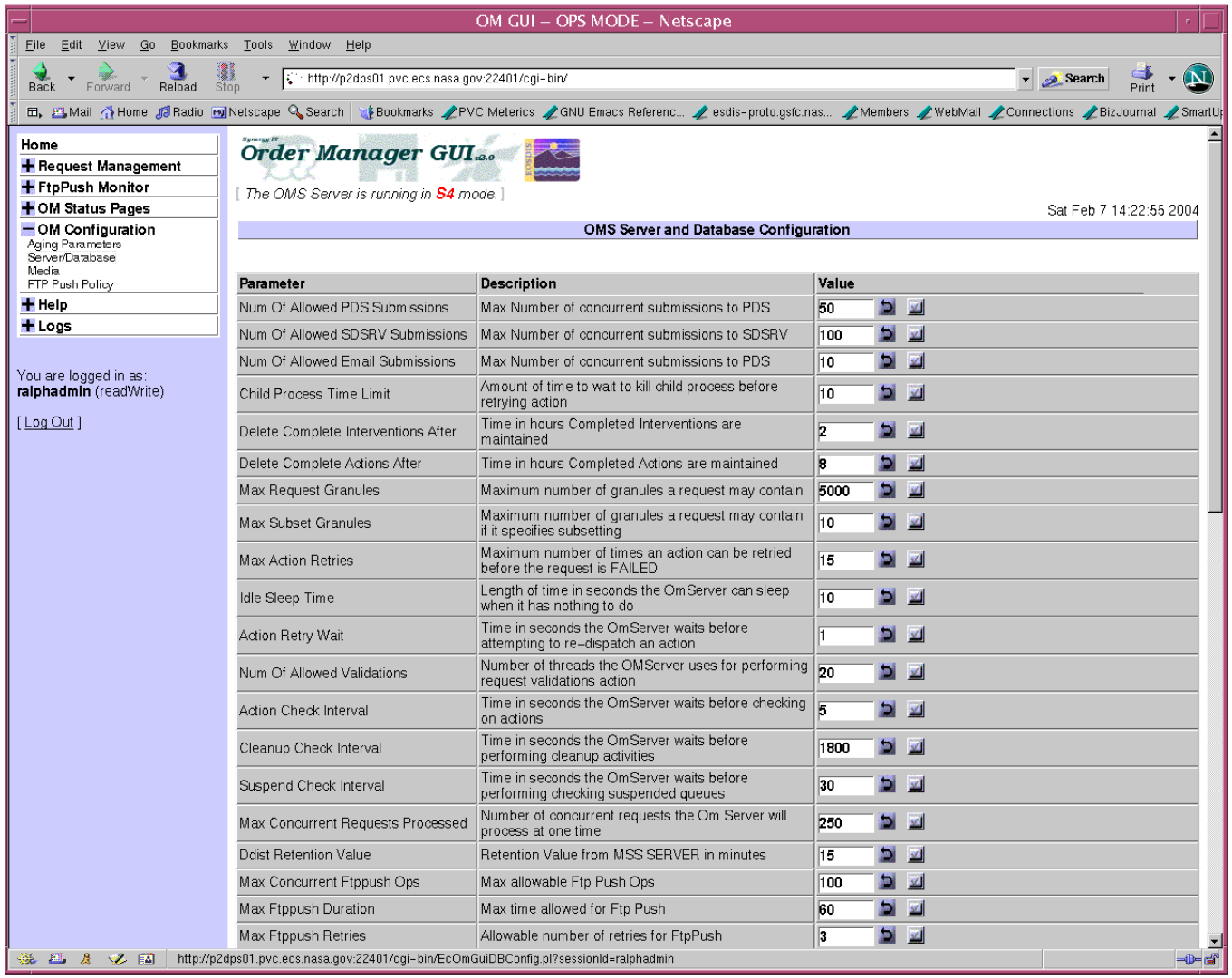
Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying OMS Server or Database Parameters (Cont.)**
  - **OMS server and database parameters are dynamically loaded from the OMS database into the configuration pages on the OM GUI**
    - » **If a configuration parameter is added to the database, it is subsequently displayed on the OM GUI when the applicable configuration page is requested**
    - » **If a configuration parameter is deleted from the database, it is no longer displayed on the OM GUI**
    - » **Consequently, the configuration parameters displayed on the OM GUI are variable**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying OMS Server or Database Parameters: Procedure**
  - **Click on the OM Configuration link**
  - **Click on the Server/Database link**
  - **Observe information displayed on the OMS Server and Database Configuration page**
  - **To modify server or database parameter value(s)…**
    - » **Enter the new value(s) in the text entry box(es) for the relevant parameter(s)**
    - » **Click on the Apply button**

OM GUI: OMS Server and Database Configuration Page



Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying Media Parameters**
  - **The Media Configuration page provides the full-capability operator with a means of checking and modifying media parameters**
  - **The limited-capability operator can check but is not allowed to change any media parameters**
  - **Media parameters are specific to each kind of distribution medium and affect such things as limit checking against standard media capacity limits (e.g., minimum request size and maximum request size) and the partitioning of requests (e.g., partition size)**

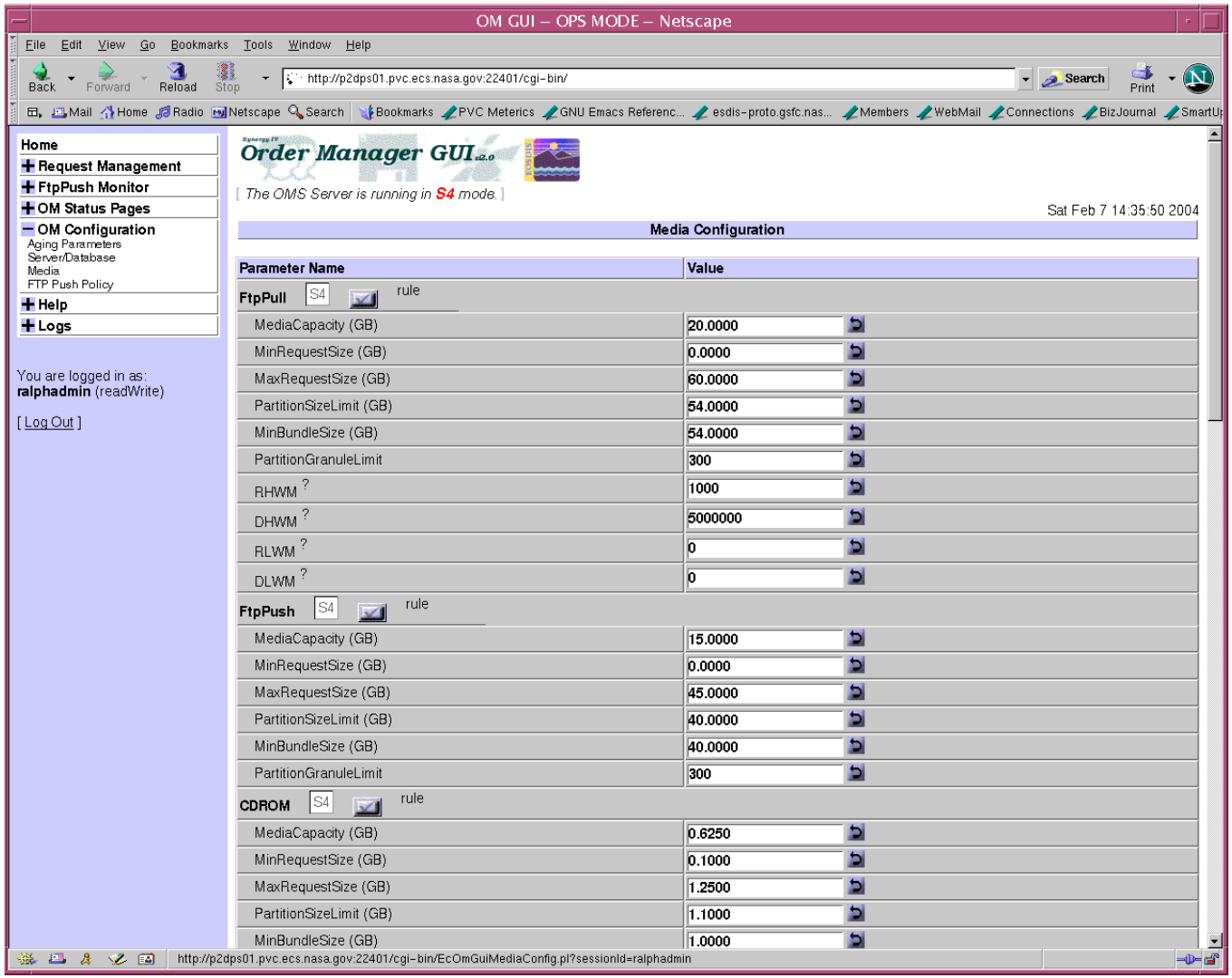
Monitoring/Controlling Order Manager Operations (Cont.)

- Checking/Modifying Media Parameters (Cont.)
  - Media parameters are dynamically loaded from the OMS database into the configuration pages on the OM GUI
    - » If a configuration parameter is added to the database, it is subsequently displayed on the OM GUI when the applicable configuration page is requested
    - » If a configuration parameter is deleted from the database, it is no longer displayed on the OM GUI
    - » Consequently, the configuration parameters displayed on the OM GUI are variable

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying Media Parameters: Procedure**
  - **Click on the OM Configuration link**
  - **Click on the Media link**
  - **Observe information displayed on the Media Configuration page**
  - **To modify media value(s)…**
    - » **Enter the new value(s) in the text entry box(es) for the relevant parameter(s)**
    - » **Click on the Apply button**
    - » **Click on the appropriate button in the "Remember Values" confirmation dialogue box**

OM GUI: Media Configuration Page



OM GUI: "Remember Values" Confirmation Dialogue Box

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying FTP Push Policy Configuration**
  - **The FTP Push Policy Configuration page provides the full-capability operator with a means of defining and configuring the fine-tuning parameters of ftp push destinations**
  - **The limited-capability operator can check but is not allowed to change the fine-tuning parameters of ftp push destinations**
  - **Configuration parameters on the FTP Push Policy Configuration page are grouped in the following three areas:**
    - » **Global Settings for All Destinations**
    - » **Settings for Non-Configured Destinations**
    - » **Frequently Used Destinations**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying FTP Push Policy Configuration (Cont.)**
  - **All ftp push destinations belong to one of two groups:**
    - » **Frequently Used group**
    - » **Non-Configured (general) group**
  - **All ftp push destinations not specifically defined as Frequently Used Destinations are considered non-configured**
    - » **They use the parameters in the Settings for Non-Configured Destinations area**
  - **All new destinations use the Settings for Non-Configured Destinations as their default values until other values are specifically assigned**

Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying FTP Push Policy Configuration (Cont.)**
  - **Global Settings for All Destinations are parameters that apply to all destinations regardless of their individual settings**
    - » **Global settings apply to both frequently used and non-configured destinations**

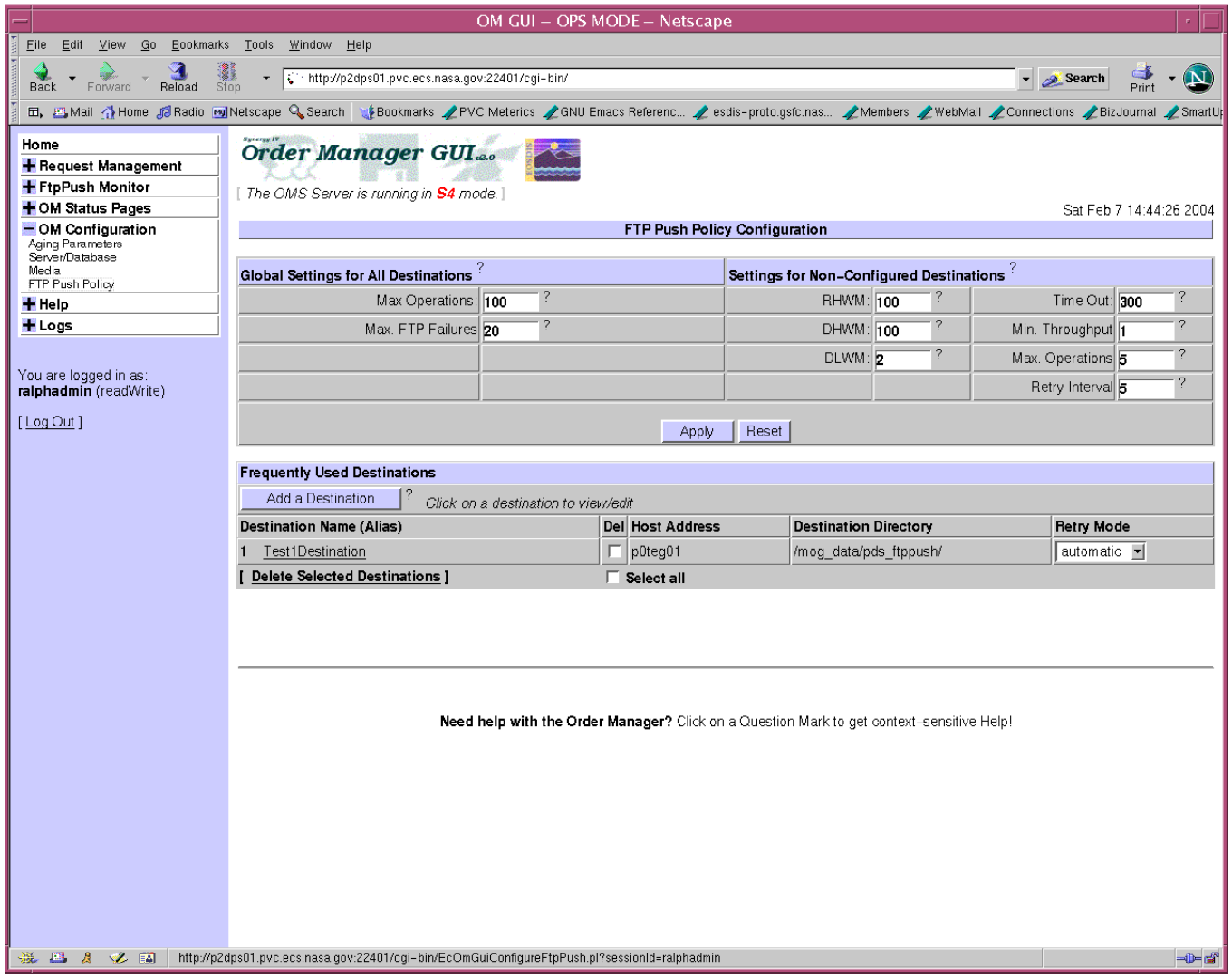
Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying FTP Push Policy Configuration: Procedure**
  - **Click on the OM Configuration link**
  - **Click on the FTP Push Policy link**
  - **Observe information displayed on the FTP Push Policy Configuration page**
  - **To modify value(s) in either the Global Settings for All Destinations area or Settings for Non-Configured Destinations area …**
    - » **Enter the new value(s) in the text entry box(es) for the relevant parameter(s)**
    - » **Click on the Apply button**
  - **To change the retry mode for a Frequently Used Destination select the mode from the option button**

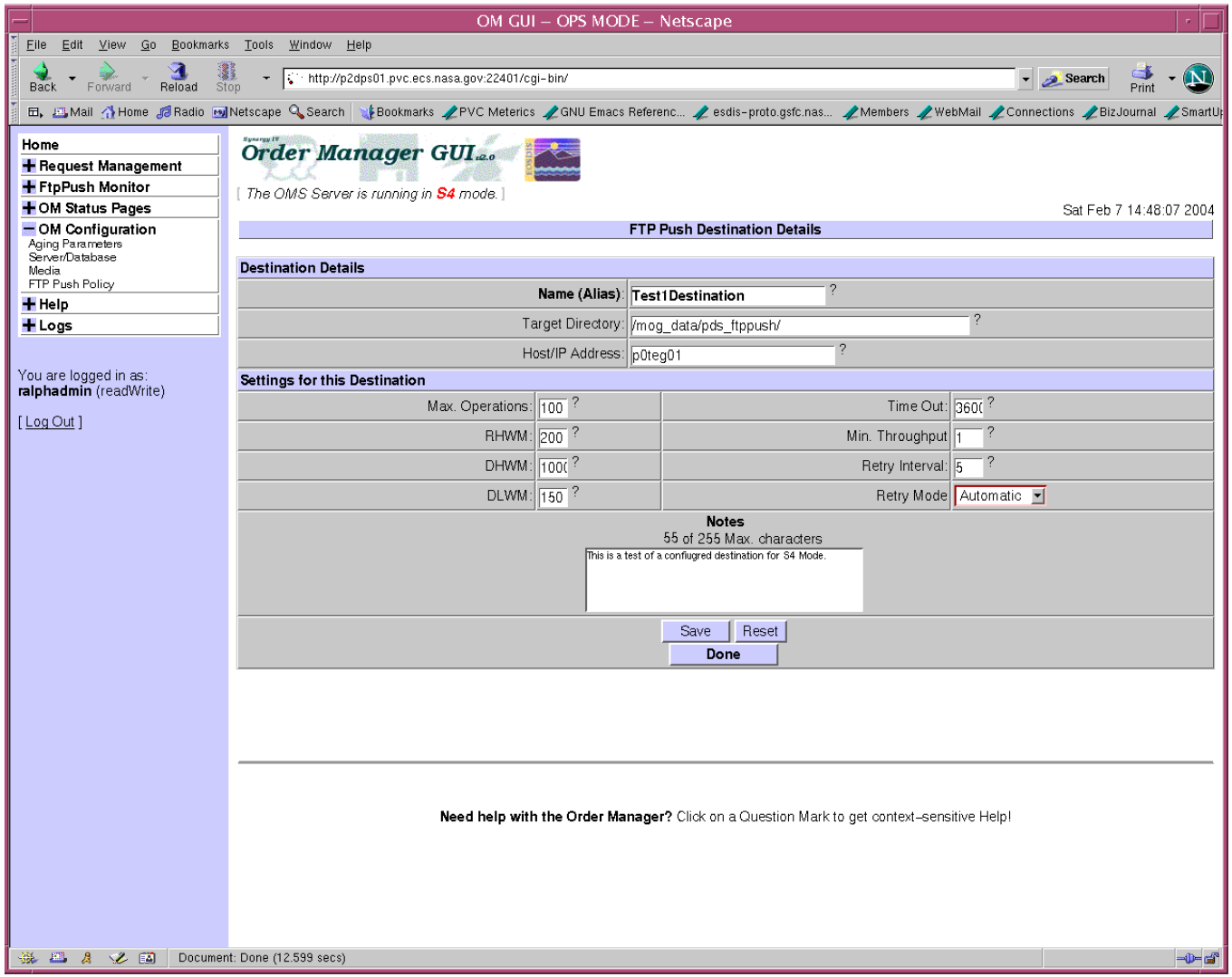
Monitoring/Controlling Order Manager Operations (Cont.)

- **Checking/Modifying FTP Push Policy Configuration: Procedure (Cont.)**
  - **To remove (delete) destination(s) from the Frequently Used Destinations area…**
    - » **Either click in the corresponding box(es) in the Del column or click in the Select all box**
    - » **Click on the Remove Selected Destinations link**
    - » **Click on the OK button**
  - **To add a new Frequently Used Destination perform the procedure for Adding Destinations to the Frequently Used Destinations Area**
  - **To modify parameter value(s) for Frequently Used Destination(s), perform the procedure for Modifying Values Assigned to Parameters of Frequently Used Destinations**

OM GUI: FTP Push Policy Configuration Page



OM GUI: FTP Push Destination Details Page



Monitoring/Controlling Order Manager Operations (Cont.)

- **Adding Destinations to the Frequently Used Destinations List**
  - **The Add New Destination page provides the full-capability operator with a means of adding destinations to the Frequently Used Destinations list on the FTP Push Policy Configuration page**
  - **The limited-capability operator is not allowed to add destinations to the Frequently Used Destinations list on the FTP Push Policy Configuration page**
  - **A destination on the Frequently Used Destinations list is defined by the following three attributes:**
    - » **Alias – a unique descriptive name or handle by which the destination can be easily identified**
    - » **Target Directory - the directory on the remote host to which files will be pushed**
    - » **Host Address - the remote host machine name or IP address**

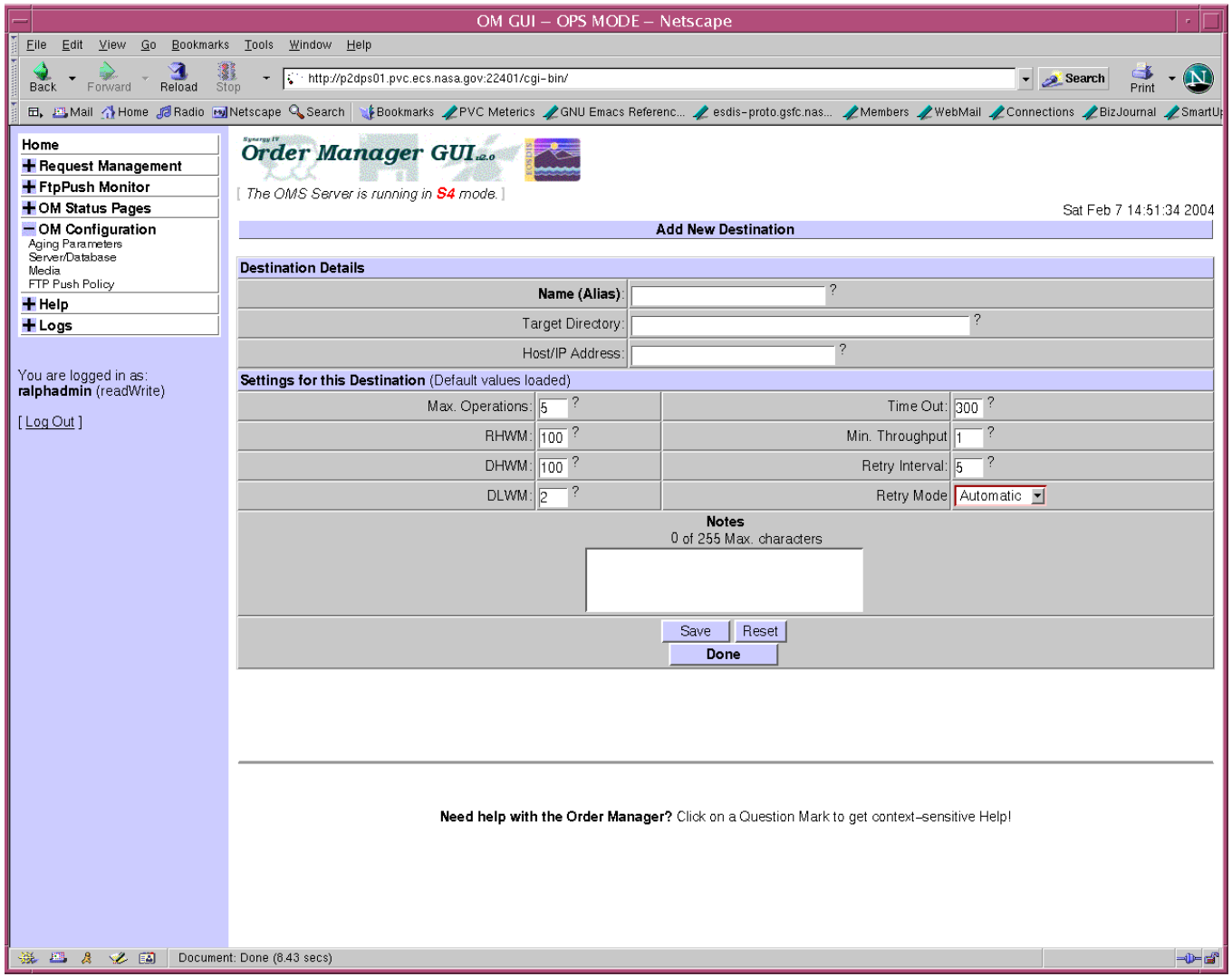
Monitoring/Controlling Order Manager Operations (Cont.)

- **Adding Destinations to the Frequently Used Destinations List (Cont.)**
  - **Each destination on the Frequently Used Destinations list must have exclusive attributes and an exclusive alias**
  - **Each new destination is initially assigned the same parameter values as are used by the non-configured destinations**

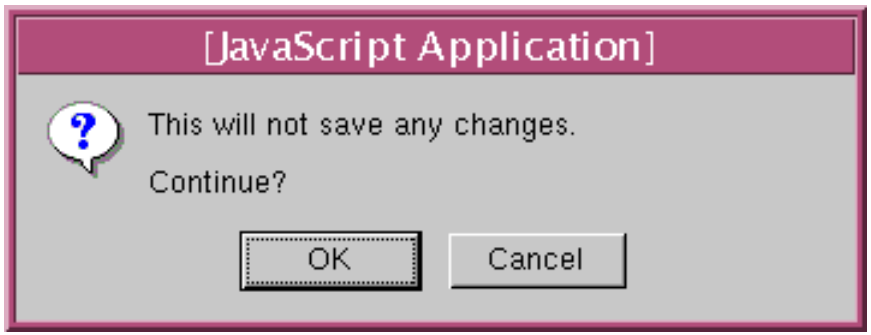
Monitoring/Controlling Order Manager Operations (Cont.)

- **Adding Destinations to the Frequently Used Destinations List: Procedure**
  - Click on the OM Configuration link
  - Click on the FTP Push Policy Configuration link
  - Click on the Add a Destination button
  - Enter value(s) in the text entry box(es) for the relevant attribute(s)/parameter(s)
  - Select the retry mode from the option button
  - To enter a note concerning the destination, type the applicable text in the Notes text box
  - Click on the Apply button
  - Click on the appropriate button in the "Remember Values" confirmation dialogue box
  - Click on the Done button
  - Click on the OK button

OM GUI: Add New Destination Page



OM GUI: “Done” Confirmation Dialogue Box



Monitoring/Controlling Order Manager Operations (Cont.)

- **Modifying Values Assigned to Parameters of Frequently Used Destinations**
  - **The FTP Push Destination Details page provides the full-capability operator with a means of modifying the values assigned to parameters of frequently used ftp push destinations (as listed in the Frequently Used Destinations area of the FTP Push Policy Configuration page)**
  - **The limited-capability operator can check but is not allowed to change the values assigned to parameters of frequently used ftp push destinations**

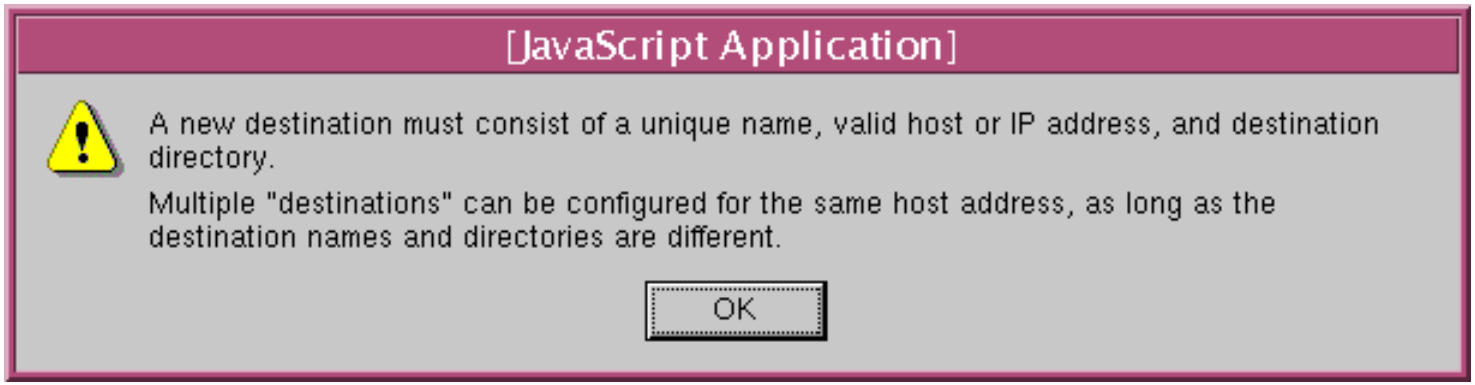
Monitoring/Controlling Order Manager Operations (Cont.)

- **Modifying Values Assigned to Parameters of Frequently Used Destinations: Procedure**
  - Click on the OM Configuration link
  - Click on the FTP Push Policy Configuration link
  - Click on the specific Destination Name
  - Observe information displayed on the FTP Push Destination Details page
  - Enter value(s) in the text entry box(es) for the relevant attribute(s)/parameter(s)
  - Select the retry mode from the option button
  - To enter a note concerning the destination, type the applicable text in the Notes text box
  - Click on the Apply button
  - Click on the Done button
  - Click on the OK button

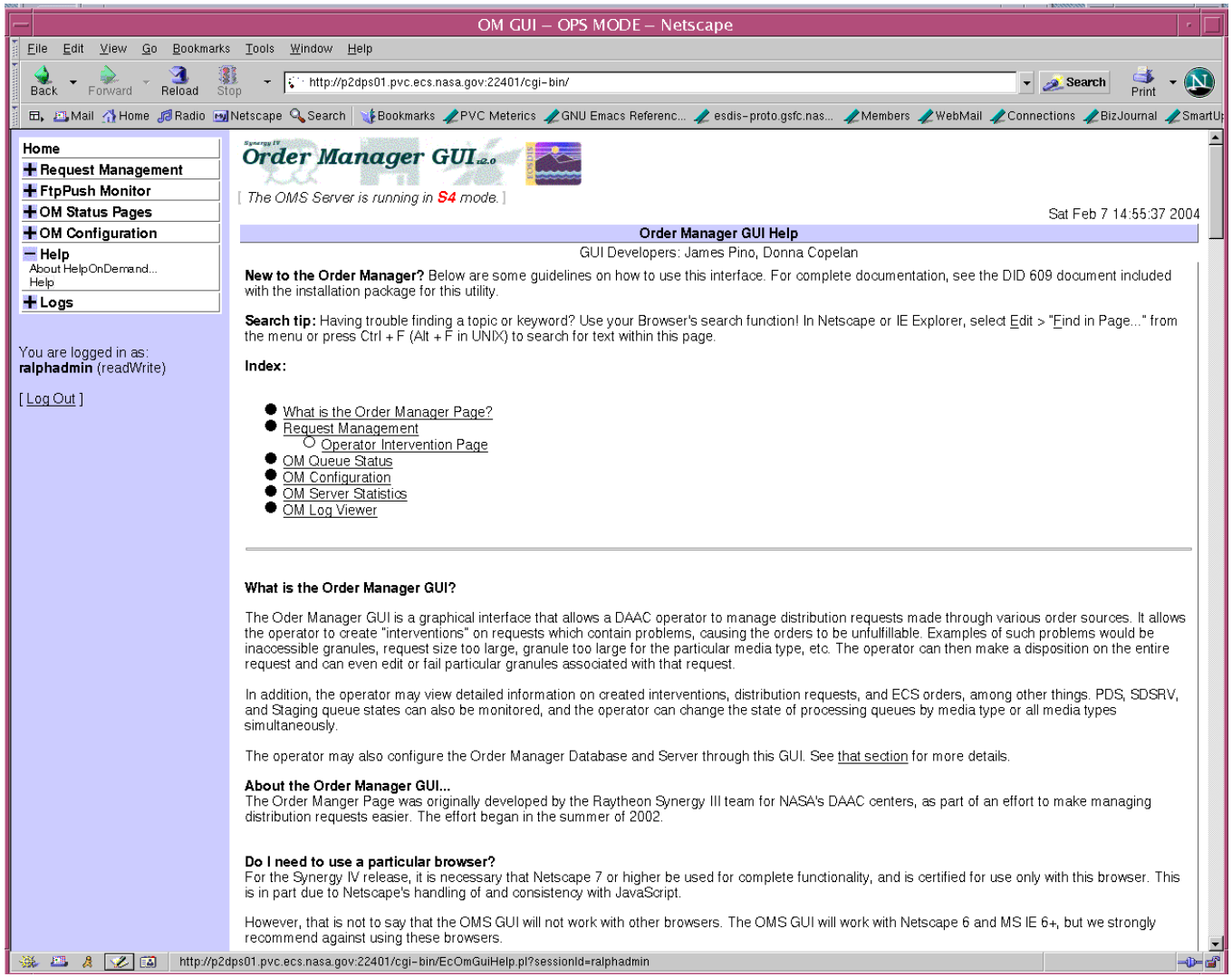
Monitoring/Controlling Order Manager Operations (Cont.)

- **Using OM GUI Help**
  - **There are several ways for the Distribution Technician to get access to help in using the OM GUI**
    - » **Whenever there is little question mark next to a button or text field on an OM GUI page, clicking on the question mark opens a dialogue box that describes the item**
      - **The "HelpOnDemand" feature provides context-sensitive help for each page, particularly for controls or parameters that may not be entirely self-descriptive)**
    - » **For help on a particular topic the Help link in the navigation frame of the OM GUI causes the Help page to be displayed**

Example of HelpOnDemand



OM GUI Help Page



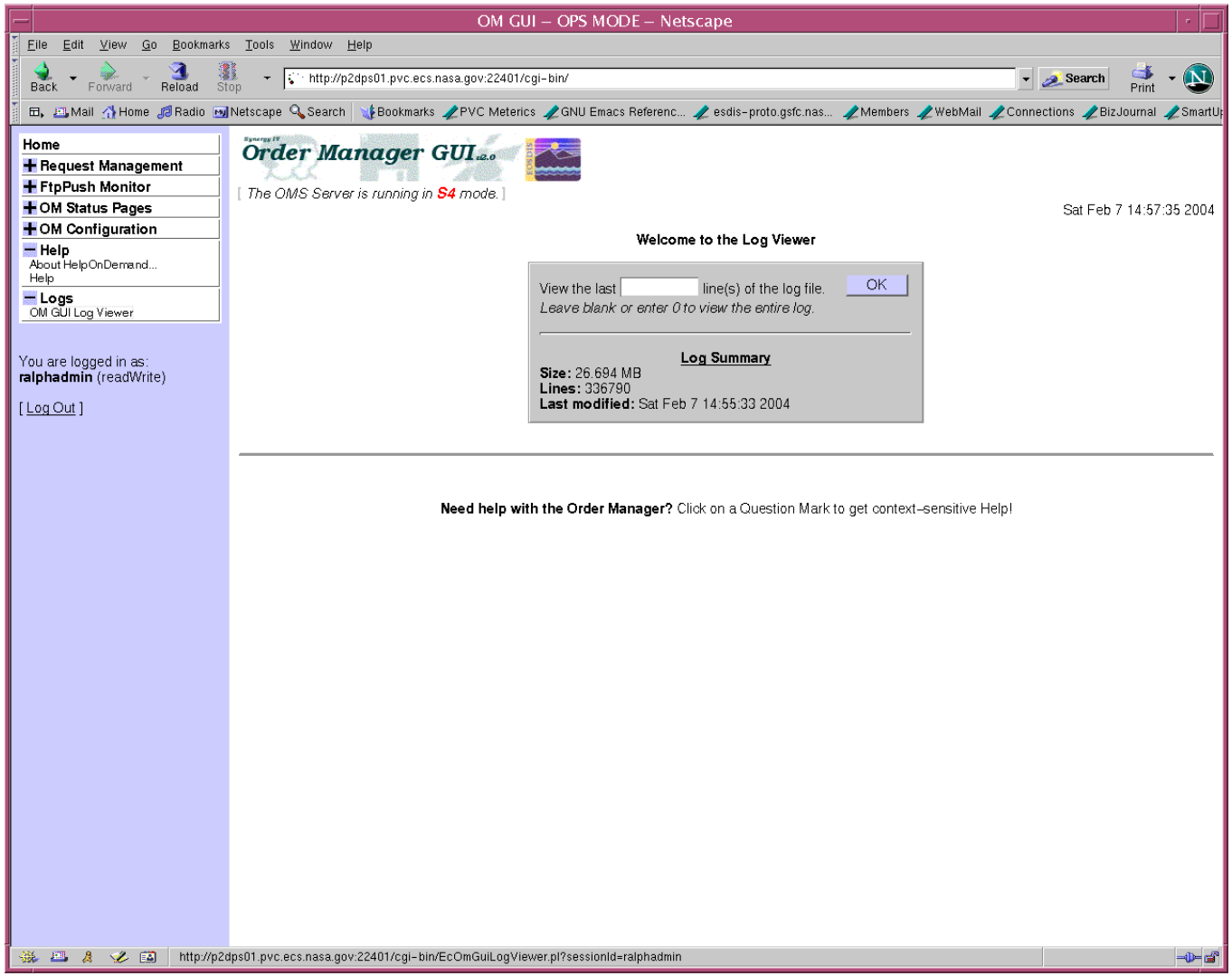
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing the OM GUI Log**
  - **The OM GUI Log Viewer page provides the Distribution Technician with a means of checking entries in the OM GUI log**
  - **The log file that the log viewer displays is located under the cgi-bin/logs directory where the OM GUI is installed**
    - » **It is not the web server log or the SYSLOG**
    - » **It is a log (EcOmGui.log) that is specifically generated by and for the OM GUI**

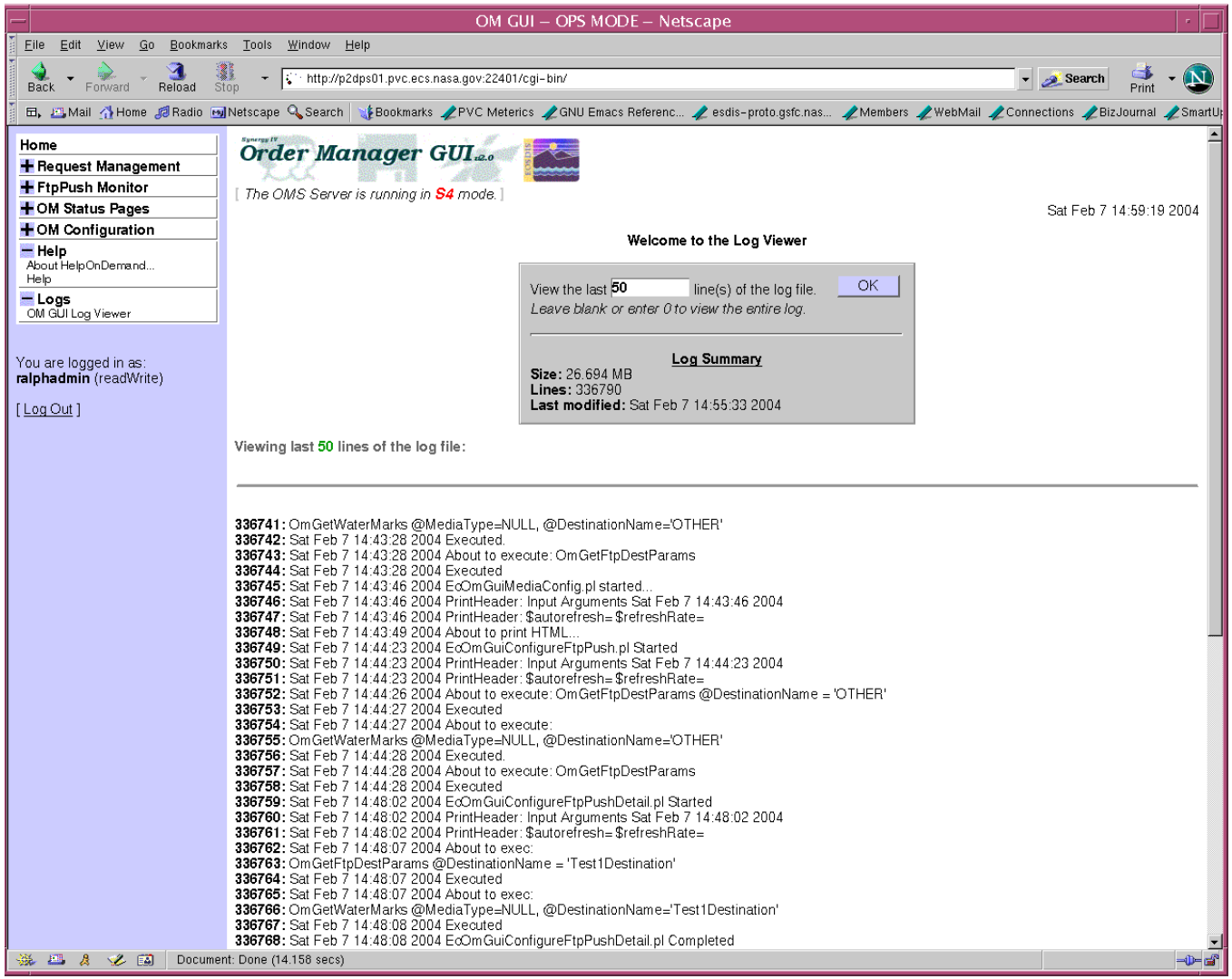
Monitoring/Controlling Order Manager Operations (Cont.)

- **Viewing the OM GUI Log: Procedure**
  - Click on the Logs link
  - Click on the OM GUI Log Viewer link
  - Observe information displayed in the Log Summary
  - In the "View the last ___ line(s) of the log file" text box type the appropriate number of lines to be displayed
    - » Entering 0 (zero) or leaving the text box blank indicates that the entire log file should be displayed
  - Click on the OK button
  - Observe information displayed in the log file

OM GUI Log Viewer Page



OM GUI Log Viewer Page (Showing Log File Entries)



Using the OMS Configuration Script (OMS CI)

- **OMS Configuration Script (OMS CI) Activities**
  - **The OMS Configuration Script or OMS Command-Line Interface (OMS CI) allows full-capability operators to configure certain attributes of the OMS that are not configured using the OM GUI**
    - » **For example, switching between Synergy IV and Synergy III operations**
  - **For the most part the attributes that are configured using the OMS CI do not require frequent modification**
  - **The OM CI utility is intended for full-capability operators only**
  - **Because it is a UNIX utility, the OM CI depends on standard UNIX permissions to restrict execution of the script to authorized users**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Starting the OMS CI**
  - **Before starting the OM CI, it may be necessary to prepare input files that are specified in optional arguments when starting the OM CI**
  - **If such input files are to be used the full-capability operator starts the OMS GUI referencing the input file in the command-line arguments**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Preparing Input Files for Use with the OMS CI**
  - **There are two general types of input files used with the OMS CI:**
    - » **Synergy III mode exception files**
    - » **Order-tracking retention time data**
  - **If any Synergy III mode exceptions are to be applied using the OMS CI, the appropriate input file(s) must be prepared first so the file(s) can be included in arguments that are specified when the OMS CI is started**
  - **Each potential input is a "flat" file that contains one of the following types of data:**
    - » **ESDT collection(s)**
    - » **Media type(s)**
    - » **Ftp push destination(s)**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Preparing Input Files for Use with the OMS CI (Cont.)**
  - **The Synergy III mode exception files can be used to specify either of the following dispositions for the data:**
    - » **Add the data in the file to the current types of data being processed in S3 mode**
    - » **Delete the data in the file from the current types of data being processed in S3 mode**
  - **Consequently, files may be created for the following six conditions:**
    - » **Add ESDT collection(s) to processing in S3 mode**
    - » **Delete ESDT collection(s) from processing in S3 mode**
    - » **Add media type(s) to processing in S3 mode**
    - » **Delete media type(s) from processing in S3 mode**
    - » **Add ftp push destination(s) to processing in S3 mode**
    - » **Delete ftp push destination(s) from S3 processing**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Preparing Input Files for Use with the OMS CI (Cont.)**
  - **Each Synergy III mode exception file specified when starting the OMS CI must contain only one of the preceding types of data**
    - » **For example, if a new ftp push destination is to be added and a current ftp push destination is to be deleted, two separate files must be created, one containing the destination to be added and the other containing the destination to be deleted**
    - » **The same principle applies whether the additions or deletions relate to ftp push destinations, media types, or ESDTs**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Preparing Input Files for Use with the OMS CI (Cont.)**
  - **If order-tracking retention time (how long order-tracking information is kept in the OMS database) is to be modified using the OMS CI, a file of data "imported" from the OMS database (using the OMS CI) must be edited so the file can be included in an argument that is specified when the OMS CI is started the next time**
  - **The "imported" file contains the following three types of data:**
    - » **Order source [i.e., "D" (Data Pool), "S" (Spatial Subscription Server), "V" (V0 gateway), or "M" (machine-to-machine gateway)]**
    - » **Distribution medium**
    - » **Retention time period in days**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Preparing Input Files for Use with the OMS CI (Cont.)**
  - **The "imported" order-tracking retention time file is edited to incorporate the new configuration information (i.e., retention time for each set of order source/medium)**
  - **The edited file is subsequently "exported" to the OMS database (using the OMS CI), where the new values are entered**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Preparing Input Files for Use with the OMS CI: Procedure**
  - **Access a terminal window logged in to the Data Pool Server host**
  - **Enter cd /usr/ecs/MODE/CUSTOM/WWW/OMS/cgi-bin**
  - **Enter vi filename**
  - **Using vi editor commands create a file that specifies the relevant values to be sent to the OMS**
  - **Press the Esc key**
  - **Enter ZZ**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Starting the OMS CI**
  - **If any Synergy III mode exceptions are to be applied using the OMS CI, the appropriate input file(s) must have been prepared first so the file(s) can be included in arguments that are specified when the OMS CI is started**
  - **The OMS CI script can take several options to process input files for Synergy III mode exceptions**
  - **Each potential input is a "flat" file that contains one of the following types of data:**
    - » **ESDT collection(s)**
    - » **Media type(s)**
    - » **Ftp push destination(s)**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Starting the OMS CI**
  - Based on the file names included in arguments when it is started, the OMS CI determines which file was specified for which purpose (media, ESDTs, or destinations) and requests confirmation
  - Then the OMS CI requests whether the file entries are to be added or deleted from the relevant list
- **Starting the OMS CI: Procedure**
  - Access a terminal window logged in to the Data Pool Server host
  - Enter cd /usr/ecs/*MODE*/CUSTOM/WWW/OMS/cgi-bin
  - Enter EcOmConfig.pl *MODE* [-s3col *filename*] [-s3media *filename*] [-s3dest *filename*] [-ot *filename*] [-help]

OMS CI: Main Menu

OMS Configuration CI v1.0

MENU:

----

1) Synergy III Mode Exceptions
2) Configure MSS/OMS Order Tracking
3) Switch Server Mode
4) Help

Type "x" to exit

=>

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Using the OMS CI**
  - **The full-capability operator can perform the following tasks using the OMS CI:**
    - » **Processing Input Files Specified for Synergy III Exceptions**
    - » **Configuring How Long Order-Tracking Information is Kept in the OMS Database**
    - » **Switching Between Synergy IV and Synergy III Operations**
    - » **Getting OMS CI Help**
  - **Limited-capability operators should not be able to get access to the OMS CI**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Processing Input Files Specified for Synergy III Exceptions**
  - **If any Synergy III mode exceptions are to be applied using the OMS CI, the appropriate input file(s) must have been prepared first and the file name(s) must have been included in arguments that were specified when the OMS CI was started**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Processing Input Files Specified for Synergy III Exceptions (Cont.)**
  - **There may be as many as six Synergy III exception files to account for the following six conditions:**
    - » **Add ESDT collection(s) to processing in Synergy III mode**
    - » **Delete ESDT collection(s) from processing in Synergy III mode**
    - » **Add media type(s) to processing in Synergy III mode**
    - » **Delete media type(s) from processing in Synergy III mode**
    - » **Add ftp push destination(s) to processing in Synergy III mode**
    - » **Delete ftp push destination(s) from processing in Synergy III mode**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Processing Input Files Specified for Synergy III Exceptions (Cont.)**
  - **The files can specify either types of data to be added to or types of data to be deleted from the current types of data being processed in Synergy III mode**
    - » **For example, a file of media types can add to the media types processed in Synergy III mode or a file can specify media types to be deleted from the media types processed in Synergy III mode**
    - » **The file specified when starting the OMS CI must contain either the one type of data or the other, not both**
    - » **If both additions and deletions are to be made, two separate files must be created**
    - » **The same principle applies whether additions or deletions of media types, ESDTs, or ftp push destinations are specified**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Processing Input Files Specified for Synergy III Exceptions (Cont.)**
  - **Based on the file names included in arguments when it is started, the OMS CI determines which file was specified for which purpose (media, ESDTs, or destinations) and requests confirmation**
  - **When the full-capability operator confirms the file and its content, the OMS CI requests whether the entries in the file are to be added or deleted from the relevant list**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Processing Input Files Specified for Synergy III Exceptions: Procedure**
  - **At the OMS CI Main Menu prompt enter 1**
  - **At the Synergy III Mode Exceptions Menu prompt enter 1**
  - **At the Use this file? [y/n] prompt enter y**
  - **At the Synergy III Mode Actions Menu prompt, enter the appropriate number**
    - » **1 - to add the data in the file to the types of data to be processed in Synergy III mode**
    - » **2 - to remove add the data in the file from the types of data to be processed in Synergy III mode**
    - » **3 - to abort the process of processing the file**
  - **At the "Submission successful. Press <ENTER> to continue..." message, press Return/Enter**
  - **Repeat steps as necessary**

OMS CI: Synergy III Mode Exceptions Menu

```
Synergy III Mode Exceptions:
----------------------------
1) Process input files...
2) Back to Main Menu

=>
```

OMS CI: Synergy III Mode Actions Menu

```
Select an action to take:

1) ADD the media types specified in the file

2) DELETE the media types specified in the file

3) Back to main menu

=>
```

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Configuring How Long Order-Tracking Information is Kept in the OMS Database**
  - **The full-capability operator can configure how long order-tracking information is kept in the OMS database**
    - » **The length of time can be different for each combination of media type and order source**
  - **The process of configuring how long order-tracking information is kept in the OMS database involves "importing" the current configuration to a local file, editing the file, and exporting it back into the OMS database**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Configuring How Long Order-Tracking Information is Kept in the OMS Database (Cont.)**
  - **When the full-capability operator requests the OMS CI to "import" the current configuration, the utility creates and saves a unique file in the current directory**
  - **The saved file contains the configuration for all media types and all order sources**
  - **The full-capability operator exits the OMS CI and edits the import file to incorporate changes**
  - **The full-capability operator starts the OMS CI using the –ot option and specifying the edited file**
  - **The full-capability operator uses the OMS CI to export the data in the file to the database**
  - **The OMS CI parses the file and submits the changes to the OMS database**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Processing Input Files Specified for Synergy III Exceptions: Procedure**
  - **At the OMS CI Main Menu prompt enter 2**
  - **At the Configure Order Tracking Data Menu prompt enter the appropriate number**
    - » **1 - to import the current order-tracking retention time configuration (from the OMS database) into a file**
    - » **2 - to export an edited order-tracking retention time file to the OMS database**
    - » **3 - to view the current configuration**
    - » **4 - to return to the OMS CI Main Menu**
  - **If the current order-tracking retention time configuration was imported into a file, exit from the OMS CI**
  - **If applicable, edit the import file as described in Preparing Input Files for Use with the OMS CI**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Processing Input Files Specified for Synergy III Exceptions: Procedure (Cont.)**
  - **After editing the order-tracking retention time file, start the OMS CI using the -ot option and the file name as an argument**
  - **After starting the OMS CI with reference to the edited file, at the Configure Order Tracking Data Menu prompt enter 2**
  - **To export an edited order-tracking retention time file to the OMS database, at the Do you want to use this one? [y/n] prompt enter y**
  - **To continue exporting an edited order-tracking retention time file to the OMS database, at the Continue? [y/n] prompt enter y**
  - **At the "Export OK. Press <ENTER> to continue..." message, press Return/Enter**

OMS CI: Configure Order Tracking Data Menu

```
Configure Order Tracking Data
-----------------------------

1) Import current configuration to file...
2) Export new configuration to database...
3) View current configuration
4) Back to main menu
=>
```

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Switching Between Synergy IV and Synergy III Operations**
  - **The option to switch server (processing) mode allows the full-capability operator to switch the OMS Server processing between S4 (Synergy IV) operations and S3 (Synergy III) operations**
  - **The feature works like a toggle:**
    - » **If the current mode is S3, the only option is to switch to S4 and vice versa**
  - **Invoking the option to switch server (processing) mode allows also causes the current status of the OMS Server (i.e., "up" or "down") to be displayed**
  - **Because the processing mode is kept as a parameter in the OMS database, it can be changed regardless of OMS server status**

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Switching Between Synergy IV and Synergy III Operations (Cont.)**
  - **The OMS Server must be shut down before switching the OMS Server mode**
- **Switching Between Synergy IV and Synergy III Operations: Procedure**
  - **At the OMS CI Main Menu prompt enter 3**
  - **At the Switch Processing Mode Menu prompt enter 1**

OMS CI: Switch Processing Mode Menu

```
1) Switch Processing mode to S3
2) Back to main menu
3) Exit
=>
```

Using the OMS Configuration Script (OMS CI) (Cont.)

- **Getting OMS CI Help**
  - The "help" function of the OMS CI allows the full-capability operator to display a complete synopsis of the options and all available functions of the CI
- **Getting OMS CI Help: Procedure**
  - At the OMS CI Main Menu prompt enter 4
  - To view additional help information press Return/Enter
  - To exit from Help enter q

OMS CI: Help

```
OMS Configuration CI 1.0 HELP
-------------------------------------------------------------

Type "q" at any time to quit help.

Usage:
EcOmConfig.pl [options]
-ot <file>              Order tracking export file
-s3col <file>           File containing Synergy III ESDT collections
-s3media <file>         File containing Synergy III media types
-s3dest <file>          File containing Synergy III FTP destinations



SWITCH SERVER MODE
This function toggles the server mode between "S3" and "S4". It
sets a parameter in the database that the OMS Server picks up
the next time it is started. It does not set the mode directly
in the server.
--MORE--
```

Tuning Data Server Subsystem Parameters

- System parameters may be subject to control by Configuration Management (CM)
  - When making or requesting a change to system parameters, the CM process at the particular site must be followed (if applicable)
- Two databases where parameters can be set:
  - Configuration Registry database
  - Storage Management and Data Distribution database
- For Storage Management servers the Registry has database connectivity information only
  - All other configuration information is in the Storage Management and Data Distribution database and is typically entered or modified using the Storage Management Control GUI

Tuning Data Server Subsystem Parameters (Cont.)

- **Configuration Registry**
  - **Configuration Registry Server provides a single interface (via a Sybase server) for retrieving configuration attribute-value pairs for ECS servers from the Configuration Registry database**
    - » **When ECS servers are started they access the Configuration Registry database to obtain needed configuration parameters**
  - **Database Administrator has access to a Configuration Registry GUI for viewing and editing configuration data in the database**
  - **It is necessary to coordinate with the Database Administrator when changes to configuration parameters are needed**
  - **Changes to configuration-controlled parameters are subject to approval through the site CM process**

Tuning Data Server Subsystem Parameters (Cont.)

- **Default and adjusted values assigned to system parameters vary from site to site**
  - **For guidance concerning the assignment of values to parameters included in the Configuration Registry refer to document 910-TDA-022, Custom Code Configuration Parameters for ECS**
    - » **Document is available at http://cmdm.east.hitc.com/baseline/ under "Technical Documents"**

Tuning Data Server Subsystem Parameters (Cont.)

- **Parameters whose values may be modified to enhance system functioning or performance**
  - **AppLogSize [parameter applies to all servers]**
    - » **Maximum size of the application log (ALOG) file for a particular application**
    - » **Recommended size varies considerably depending the nature of the application for which the file is being written**
  - **AppLogLevel [parameter applies to all servers]**
    - » **Level of detail provided in the ALOG file for a particular application**
    - » **Acceptable values are 0, 1, 2, or 3**
    - » **A setting of "0" provides the most data**

Tuning Data Server Subsystem Parameters (Cont.)

- **Tuning parameters (Cont.)**
  - **DebugLevel [parameter applies to all servers]**
    - » **Level of detail provided in the debug log file for a particular application**
    - » **Normally acceptable values are 0, 1, 2, or 3**
    - » **A setting of "0" turns off logging; a setting of “3” provides a significant amount of data**
    - » **STMGT offers "enhanced" debugging based on bitmaps [Level 7 (the 4 bit) provides detailed database debugging; Level 15 (the 8 bit) frequently dumps the in-memory request queue (in the Request Manager)]**
    - » **Both Level 7 and Level 15 quickly create enormous log files**

Tuning Data Server Subsystem Parameters (Cont.)

- Tuning parameters (Cont.)
  - DBMaxConnections [EcDsDistributionServer and EcDsDdistGui parameter]
    - » Maximum number of database open connections (e.g., 15) allowed a particular application
    - » Increasing the assigned value may prevent other applications from getting access to the database
  - FtpPushThreshold [EcDsDistributionServer parameter]
    - » Maximum number of bytes (e.g., 15000000000) per distribution request via ftp push
    - » The FtpPushThreshold should always be greater than the size of the largest input granule used by the Planning and Data Processing Subsystems (PDPS)
    - » When a distribution request exceeds the threshold the request is suspended in DDIST

Tuning Data Server Subsystem Parameters (Cont.)

- Tuning parameters (Cont.)
  - FtpPullThreshold [EcDsDistributionServer parameter]
    - » Maximum number of bytes (e.g., 20000000000) per distribution request via ftp pull
    - » When a distribution request exceeds the threshold the request is suspended in DDIST
  - MaxThreads [EcDsDistributionServer parameter]
    - » Worker threads (created at start up) used to process active requests
    - » Needs to be greater than or equal to the sum of all priority thread limits

Tuning Data Server Subsystem Parameters (Cont.)

- Tuning parameters (Cont.)
  - RETRIEVAL_CHUNK_SIZE [EcDsDistributionServer parameter]
    - » Number of per-request archived files (e.g., 40) to be retrieved from the archive server
    - » Must be greater than zero (0)
    - » Should not be greater than half the number of service threads used by the STMGT cache managers for archive reading
  - SocketLimit [EcDsDistributionServer parameter]
    - » Number of connections (e.g., 620) to a server through the Hubble Space Telescope (HST) sockets middleware
    - » Too low a number misses connections
    - » Too high a number may adversely affect the memory of the server's host

Tuning Data Server Subsystem Parameters (Cont.)

- **Tuning parameters (Cont.)**
  - **CheckSumStoreFreq [EcDsStArchiveServer parameter]**
    - » **Percentage of StoreFile requests to be checksummed**
  - **CheckSumRetrieveFreq [EcDsStCacheManagerServer parameter]**
    - » **Percentage of checksummed files to be checksummed for file retrieve requests**

Tuning Data Server Subsystem Parameters (Cont.)

- When the value assigned to a parameter has been changed and saved in the Configuration Registry, the modified value does not take effect until the affected server has been restarted
- Example
  - Debug level for the Distribution Server log has been changed from “2” to “3” in the Configuration Registry
  - Modification does not affect the recording of data in the log until after a warm restart of the Distribution Server (at which time the server would read the parameters in the Configuration Registry)

Tuning Data Server Subsystem Parameters (Cont.)

- **Checksum Status**
  - **It is possible to have a checksum calculated for each file stored (inserted) in the archive**
  - **There is an option for having a checksum computed for each file retrieved from the archive and validating it by comparing it with the checksum previously computed**
  - **The extent of check-summing is determined by the values assigned to the following two configuration parameters in the Configuration Registry:**
    - » **CheckSumStoreFreq**
    - » **CheckSumRetrieveFreq**

Tuning Data Server Subsystem Parameters (Cont.)

- **Checksum Status (Cont.)**
  - **CheckSumStoreFreq is an archive server (EcDsStArchiveServer) parameter that specifies the percentage of StoreFile requests to be checksummed**
  - **CheckSumRetrieveFreq is a cache manager server (EcDsStCacheManagerServer) parameter that specifies the percentage of file retrieve requests to be checksummed**
  - **The recommended value for both parameters is 100 (i.e., calculate a checksum for 100% of requests)**
    - » **If either value needs to be modified, coordinate the change with the Database Administrator**

Modifying System Parameters in the STMGT/DDIST Database

- **Staging Area Size and Read-Only Cache Size**
  - **Cache and staging disk space requirements are defined in separate columns in different database tables in the Storage Management and Data Distribution Database**
  - **The TotalStagingSpace column in the DsStStagingDiskServer table contains the overall size of the space (in blocks) available for a staging disk**
  - **The TotalCacheSpace column in the DsStCache table contains the overall size (in blocks) of a cache**

Modifying System Parameters in the STMGT/DDIST Database

- **Staging Area Size and Read-Only Cache Size (Cont.)**
  - **The TotalStagingSpace column should reflect the available disk space in the file partition that is configured**
  - **The TotalCacheSpace column is seen as "Original Cache Space" from the Storage Management Control GUI**
    - » **The value assigned to the cache manager that is configured as the Pull Monitor (Pull Area Manager) should be the size (in blocks) of the partition that houses the Pull Area**
    - » **If the value assigned to the Pull Monitor (Pull Area Manager) is changed while there are files in the Pull Area, the value should be higher than the cumulative size of files in the cache**

Modifying System Parameters in the STMGT/DDIST Database

- **Staging Area Size and Read-Only Cache Size (Cont.)**
  - **In Storage Management configurations...**
    - » **Capacity ("space") is consistently specified in blocks**
    - » **File size is specified in bytes**
  - **Each cache has its own path**

Modifying System Parameters in the STMGT/DDIST Database

- **Staging Area Size and Read-Only Cache Size (Cont.)**
  - **Comparison of staging disk and cache paths:**
    - » **EcDsStCacheManagerServerACM1 cache path:**

      /usr/ecs/OPS/CUSTOM/apc/x0acg01/data/staging/cache

      [The cache area used to be identified as "user1”]
    - » **EcDsStStagingDiskServerACM1 root path:**

      /usr/ecs/OPS/CUSTOM/apc/x0acg01/data/staging//disks

      [Each staging disk has a unique number (e.g., disk1132), even across servers]
  - **Cache and staging disk space parameters are modified using the Storage Management Control GUI**

Modifying System Parameters in the STMGT/DDIST Database

- **Setting Expiration Thresholds for Cache Managers**
  - **A just-enough-cache cleanup strategy is used in Storage Management**
    - » **Caches (including the Pull Area) generally remain full because each cache manager identifies and removes just enough old files to accommodate new ones**
  - **In the DsStCache database table there is an ExpirationThreshold column that contains the number of hours it takes for files to expire in the cache area managed by each cache manager**
    - » **The ExpirationThreshold for the cache manager configured as the Pull Monitor specifies the number of hours it takes for files to expire in the Pull Area**

Modifying System Parameters in the STMGT/DDIST Database

- **Setting Expiration Thresholds for Cache Managers (Cont.)**
  - **Factors considered when setting the ExpirationThreshold for each cache manager:**
    - » **ExpirationThreshold specifies the number of hours a lien will be held against a cached file**
    - » **If a lien expires and space is required, the lien will be automatically removed unless the ConfirmDelete flag (for expired files) is set to "Yes"**
    - » **ExpirationThreshold entries are typically set at 72 (hours) but may be set at some other value (usually in the range of 24 - 72)**
    - » **Too short a time limits the ability of users to get their data before it is deleted (if ConfirmDelete is set to "No")**
    - » **Too long a time increases the chance of filling up the cache**

Modifying System Parameters in the STMGT/DDIST Database

- **Setting Expiration Thresholds for Cache Managers (Cont.)**
  - **The ConfirmDelete column in the DsStCache table is a flag that indicates whether to automatically delete upon reaching the ExpirationThreshold**
    - » **ConfirmDelete is typically set to "No" (do not require confirmation before deleting)**
  - **Files are pulled to the Pull Area by the Pull Monitor (Pull Area Manager); they are not pushed there by the ftp server**
  - **The Fault Level and Warning Level parameters are ignored**
  - **Expiration thresholds and ConfirmDelete flags for expired files are modified using the Storage Management Control GUI**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Storage Management Service Thread Allocation**
  - **Service threads process requests submitted to the applicable server, for example…**
    - **EcDsStRequestManagerServer**
    - **EcDsStArchiveServer**
    - **EcDsStCacheManagerServer**
    - **EcDsStStagingDiskServer**
    - **EcDsStFtpServer**
  - **The number of service threads assigned to a server should be set on the basis of the resources available and the server throughput**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Storage Management Service Thread Allocation (Cont.)**
  - **The DsStServiceThreadConfig database table contains the number, types, and priorities of service threads for Storage Management servers**
  - **The following columns indicate the number of service threads assigned to each priority:**
    - **XpressThreads**
    - **VhighThreads**
    - **HighThreads**
    - **NormalThreads**
    - **LowThreads**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Storage Management Service Thread Allocation (Cont.)**
  - **The PoolType column (DsStServiceThreadConfig database table) identifies the type of threads within a certain pool applicable to the server**
    - » **Service Threads**
    - » **Read Threads**
    - » **Write Threads**
  - **In Storage Management Read Threads and Write Threads apply to the archive servers only**
  - **The NumThreads column contains the number of threads in a particular pool**
  - **Storage Management service thread-related values are modified using the Storage Management Control GUI**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

Representative Default Values Listed in the DsStServiceThreadConfig Database Table

ServerId	PoolType	Num Threads	Xpress Threads	Vhigh Threads	High Threads	Normal Threads	Low Threads
1	ReadThreadPool	30	0	10	10	0	10
1	ThreadPool	30	0	10	10	0	10
1	WriteThreadPool	30	0	10	10	0	10
2	ReadThreadPool	10	0	0	0	0	10
2	ThreadPool	50	0	10	10	0	30
2	WriteThreadPool	100	0	20	70	0	10

- **ServerId 1 refers to EcDsStArchiveServerACM4**
- **ServerId 2 refers to EcDsStArchiveServerDRP3**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Data Distribution Priority Thread Allocation**
  - Data Distribution (DDIST) has been enhanced to support a DAAC-configurable number of thread pools with each pool having a separate thread limit
  - The pools are defined in a DDIST database table called DsDdThreadPool
    - » Each row in the table contains a unique pool identifier, a thread pool name, and the number of threads (thread limit) associated with the pool

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

Example of DsDdThreadPool Table Contents

ThreadPoolId	ThreadPoolName	ThreadLimit
13	SUB_LARCINGMGR	15
14	DEFAULT	10
15	PRODUCTION	20
16	SUB_ASTERGDS	10
17	SUB_NOAASOAP	20
18	SUB_JSMITH	20
19	PDS	30
20	USER_FTPPUSH	35
21	USER_FTPPULL	10
22	S4POPS	20
23	SUB_PRIVUSER	80
24	SUB_REGUSER	60

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- There is always a DEFAULT pool in the DsDdThreadPool table
  - A distribution request that fails to match any of the other rules for assigning requests to thread pools is automatically assigned to the DEFAULT pool
- Rules for assigning requests to thread pools are specified in the DsDdAssignmentRule table
  - Rules are DAAC-configurable and are based on request attributes
  - Attributes involved in thread pool assignments:
    - » ECSUserId
    - » Priority
    - » EsdtType
    - » MediaType
- Each row in the table defines an assignment rule

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

Example of DsDdAssignmentRule Table Contents

SeqNum	Thread PoolId	ECSUserId	Priority	Esdt Type	Media Type	EmailAddress	NumberOf Granules
50	14	ANY	ANY	ANY	scp	ANY	ANY
100	15	$EcDpPrEM	ANY	ANY	ANY	ANY	ANY
200	16	Aster_gds	NORMAL	ANY	ANY	ANY	ANY
300	13	LarcIngMgr	NORMAL	ANY	ANY	ANY	ANY
400	17	NOAA/SOAP	ANY	ANY	ANY	ANY	ANY
500	18	jsmith	NORMAL	ANY	ANY	ANY	ANY
600	19	$PDS3	ANY	ANY	ANY	ANY	ANY
900	22	s4opsaaf	ANY	ANY	ANY	ANY	ANY
1000	22	s4opsaar	ANY	ANY	ANY	ANY	ANY
1100	22	s4opsamf	ANY	ANY	ANY	ANY	ANY
1200	22	s4opsamr	ANY	ANY	ANY	ANY	ANY
1300	22	s4opsdpf	ANY	ANY	ANY	ANY	ANY
1400	22	s4opstmf	ANY	ANY	ANY	ANY	ANY
1500	22	s4opstmr	ANY	ANY	ANY	ANY	ANY
1600	23	PrivUser	ANY	ANY	FtpPush	userops@x0ins02.daac.ecs.nasa.gov	2
1700	24	RegUser	ANY	ANY	ANY	ANY	ANY
1800	17	NoneUser	ANY	ANY	ANY	ANY	ANY
1900	20	ANY	ANY	ANY	FtpPush	ANY	ANY
2000	21	ANY	ANY	ANY	FtpPull	ANY	ANY

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- For each new request, the rules (in the DsDdAssignmentRule table) are evaluated in order by SeqNum
  - When a rule is found where all conditions evaluate to true, the request is assigned to the pool specified in the ThreadPoolId column
  - A rule evaluates to true if the values of all of the request attributes (i.e., ECSUserId, Priority, EsdtType, MediaType, EmailAddress, and NumberOfGranules) match the values contained in the rule's row in the table
    - » A value of "ANY" automatically evaluates to true for that attribute
    - » Any requests that fail to match any of the rules are assigned to the DEFAULT thread pool

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Dynamic FTP server assignment**
  - **In addition to enforcing rules for assigning requests to thread pools (as specified in the DsDdAssignmentRule table) Data Distribution uses dynamic FTP server assignment as a means of preventing certain types of requests from monopolizing distribution resources**
  - **Dynamic FTP server assignment involves using a set of rules in the DsDdAssignmentRuleHWCI table to evaluate each distribution request and allocate it to the appropriate Data Distribution FTP server**
  - **The rules for assigning a distribution request to a specific FTP server (identified by HWCI) are DAAC-configurable and are based on request attributes**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Dynamic FTP server assignment (Cont.)**
  - **The following attributes are used for making an HWCI assignment:**
    - » **ECSUserId**
    - » **SeniorClient**
    - » **MediaType**
    - » **EsdtType**
    - » **PushDest**
    - » **EmailAddress**
  - **Each row in the DsDdAssignmentRuleHWCI table defines an HWCI assignment rule**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

Example of DsDdAssignmentRuleHWCI Table Contents

SeqNum	HWCI	ECSUserId	Senior Client	Media Type	Esdt Type	PushDest	EmailAddress
100	DRP1	$PDS	ANY	ANY	ANY	ANY	ANY
200	DRP1	ANY	PD	ANY	ANY	ANY	ANY
300	DRP1	ANY	IN	ANY	ANY	ANY	ANY
400	DRP1	$PDS3	ANY	ANY	ANY	ANY	ANY
500	DRP2	PrivUser	ANY	FtpPush	ANY	ANY	ANY
600	DRP1	RegUser	ANY	FtpPush	ANY	ANY	ANY
700	DRP1	s4opsaaf	ANY	FtpPush	ANY	ANY	ANY
800	DRP1	s4opsaar	ANY	FtpPush	ANY	ANY	ANY
900	DRP1	s4opsamf	ANY	FtpPush	ANY	ANY	ANY
1000	DRP1	s4opsamr	ANY	FtpPush	ANY	ANY	ANY
1100	DRP2	s4opsdpf	ANY	FtpPush	ANY	ANY	ANY
1200	DRP1	s4opstmf	ANY	FtpPush	ANY	ANY	ANY
1400	DRP1	s4opstmr	ANY	FtpPush	ANY	ANY	ANY
1500	DRP1_auto	ANY	ANY	scp	ANY	ANY	ANY

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- When DDIST receives a request, a stored procedure executes to assign the request to the appropriate thread pool based on the rules contained in the DsDdAssignmentRule table
  - Once all threads in a given thread pool have been allocated, new requests assigned to that pool are put in a "pending" state until a thread becomes available
  - Requests are no longer automatically assigned to threads in other pools if there are no available threads in their assigned pool
  - Pending requests for each pool are activated in first-in-first-out order by request priority
- Another stored procedure executes to map the request to an HWCI based on the rules contained in the DsDdAssignmentRuleHWCI table

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- DAACs may adjust configurations by updating the following tables:
  - DsDdThreadPool
  - DsDdAssignmentRule
  - DsDdAssignmentRuleHWCI
- Assignment rules may be added, deleted or updated at any time without warm-starting DDIST
  - Changes to assignment rules take effect immediately upon being entered in the database
  - All new requests entering DDIST are subject to the updated rules

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- The ThreadLimit attribute in the DsDdThreadPool table may be dynamically changed as well
  - The DDIST server reloads thread limits every 90 seconds so thread limit changes take effect within 90 seconds after being entered
  - New thread pools can be added by inserting rows in the DsDdThreadPool table; however, they are not used until the DDIST server is warm-started
- A thread pool can be deleted as long as …
  - There are no rules in the DsDdAssignmentRule table that point to the thread pool

    AND
  - All requests that have been assigned to the thread pool have been completed and have migrated out of the DDIST database

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- When DDIST is warm-started, all requests are reassigned to thread pools based on the current set of rules
- If necessary, it is possible to reassign requests after they have been assigned to a thread pool
  - Update the rules in the DsDdAssignmentRule table as necessary to ensure that the request will be assigned to the desired thread pool
  - Warm-start DDIST (EcDsDistributionServer)
- There is no GUI support for making changes to either the thread pool configuration or the FTP server assignment
  - Thread pool configuration or FTP server assignment changes are made by a DAAC DBA using the isql interface to update the DsDdThreadPool, DsDdAssignmentRule and/or DsDdAssignmentRuleHWCI tables in the database

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Guidelines for tuning DDIST priority thread allocation:**
  - **In most cases, each FtpPush destination site should have its own thread pool**
  - **For each FtpPush destination, the DAAC should determine the number of concurrent file transfers it takes to fully utilize the available network bandwidth**
    - » **The number represents a parameter called "MaxTransfers"**
  - **For subscription-based FtpPush distribution, the thread limit for the associated thread pool should be set to 130% of MaxTransfers (rounded up)**
    - » **This should provide a sufficient number of threads to utilize the available network bandwidth plus allow for one or more threads to be concurrently staging data out of the AMASS cache**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Guidelines for tuning DDIST priority thread allocation (Cont.):**
  - **For non-subscription-based FtpPush distribution, the thread limit for the associated thread pool should be set to 200% of MaxTransfers (rounded up)**
    - » **This should provide sufficient threads to utilize the available network bandwidth plus allow for staging of data from archive tapes**
  - **The total number of threads in DsDdThreadPool (i.e., sum of ThreadLimit for all rows) represents the maximum number of threads that can be active concurrently n DDIST**
    - » **The total must be less than the number of worker threads configured for DDIST**
    - » **The default number of worker threads configured for DDIST is 228**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Guidelines for tuning DDIST priority thread allocation (Cont.):**
  - **Although DDIST thread pools can be configured around request attributes other than priority, it is important to remember that STMGT CacheManager thread pools are organized by priority**
    - » **Consequently, it is important to ensure that STMGT thread pools are configured to optimally handle the likely mix of request priorities**
  - **During warm-start, it takes DDIST 0.83 second to recover each active or pending request**
    - » **Consequently, for a 2000-request backlog, it takes DDIST approximately 28 minutes to reach the end of start monitoring and begin accepting new requests**
    - » **However, note that DDIST immediately begins to work off its request backlog as requests are assigned to thread pools**

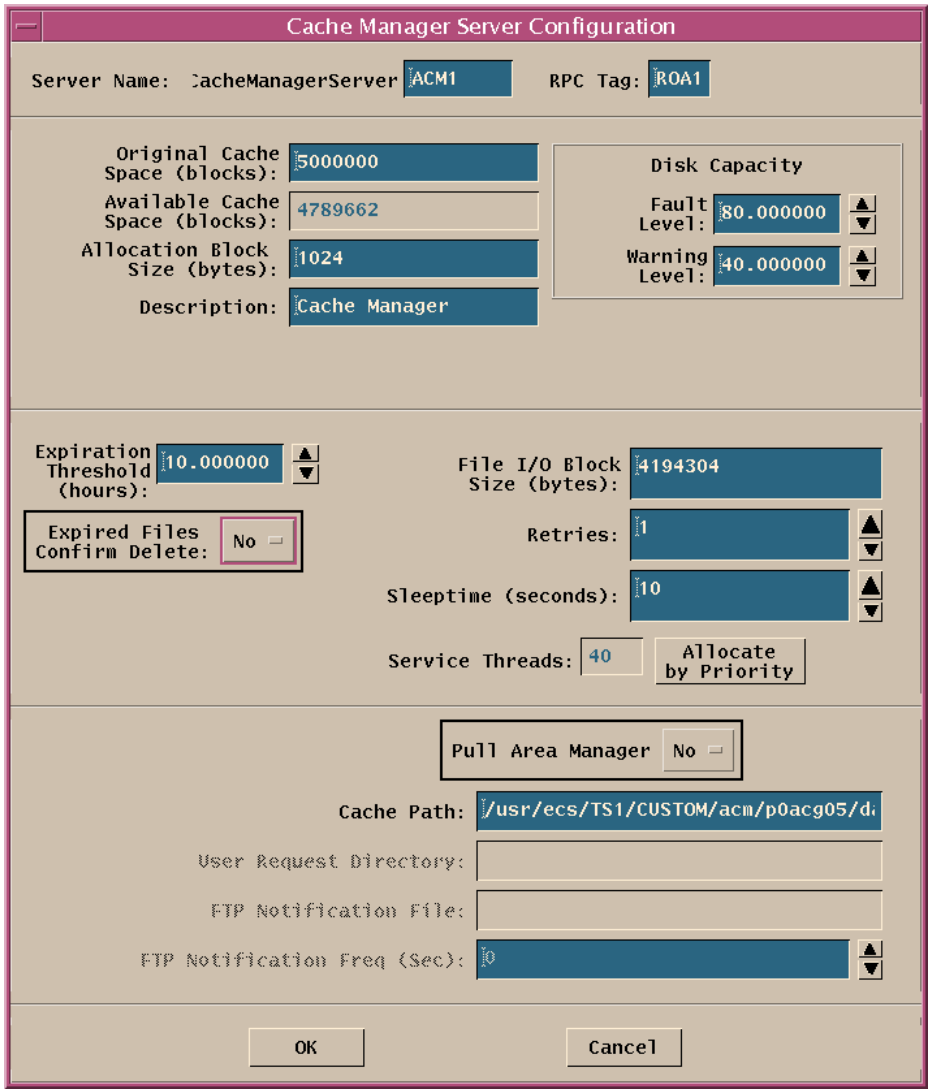
Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Modifying System Parameters in the Database Using the Storage Management Control GUI**
  - **As previously mentioned the effects on system functioning and performance must be considered before modifying system parameters**
  - **When making or requesting a change to system parameters, the CM process at the particular site must be followed (if applicable)**
  - **Depending on circumstances (e.g., operator permissions) at a particular site, it may be necessary to request that someone else make parameter modifications using the Storage Management Control GUI**

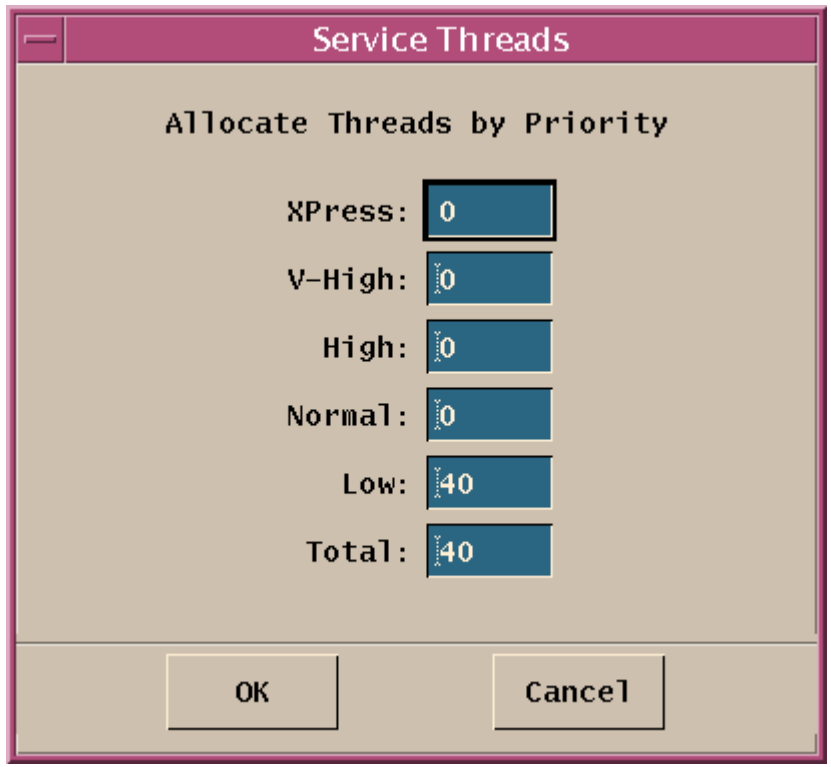
Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Modifying System Parameters in the Database Using the Storage Management Control GUI: Procedure**
  - **Click on the appropriate server type in the Server Type Information window on the Storage Config. tab**
  - **Click on the appropriate server in the server information window**
  - **Click on the Modify Server/View Stackers button**
  - **Enter modified data in relevant field(s) as necessary**
  - **If service threads are to be allocated by priority, type the desired values in the appropriate fields in the Service Threads: Allocate by Priority window**
  - **When new values have been entered in all fields to be modified, click on the OK button**

Cache Manager Server Configuration Dialogue



Service Threads: Allocate Threads by Priority Window



Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Modifying System Parameters in the Storage Management and Data Distribution Database Using ISQL**
  - **Effects on system functioning and performance must be considered before modifying system parameters**
  - **When making or requesting a change to system parameters, the CM process at the particular site must be followed (if applicable)**
  - **Depending on circumstances at a particular site, it may be necessary to request that the Database Administrator modify database parameters**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Modifying System Parameters in the Storage Management and Data Distribution Database Using ISQL (Cont.)**
  - **The procedures vary somewhat depending on what database table is to be modified**
  - **Modifications can be made to the DsDdAssignmentRule or DsDdAssignmentRuleHWCI table at any time**
    - » **As described in the procedure for Modifying System Parameters in the Storage Management and Data Distribution Database Using ISQL**
    - » **If the Distribution Server is running when the table is updated, the changes will take effect immediately (i.e., any new distribution requests will be allocated to a thread pool using the updated rules)**
    - » **Consequently, rule changes to one of the tables must be self-consistent and are typically made within the scope of a single Sybase transaction**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Modifying System Parameters in the Storage Management and Data Distribution Database Using ISQL (Cont.)**
  - **Modifications to the DsDdThreadPool table must be made while the Distribution Server is idle**
    - » **As described in the procedure for Modifying Parameters in the DsDdThreadPool Table Using ISQL**

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Modifying System Parameters in the Database Using ISQL: Procedure**
  - Access a terminal window logged in to the Access/Process Coordinators (APC) Server
  - Log in to isql
  - Specify the proper database name
  - Check the current contents of the relevant table
  - Update/delete/add the appropriate row(s) in the relevant table
  - Verify modifications to the database by checking the current contents of the relevant columns in the appropriate table
  - Quit isql

Modifying System Parameters in the STMGT/DDIST Database (Cont.)

- **Modifying Parameters in the DsDdThreadPool Table Using ISQL: Procedure**
  - If applicable, update the rules in the DsDdAssignmentRule table
  - If applicable, wait until all requests in the thread pool have been completed before continuing
  - Make a request to the Operations Controller/System Administrator to stop the Distribution Server
  - If applicable, use isql to set the ThreadLimit in the DsDdThreadPool table to zero
  - If applicable, modify the DsDdThreadPool table using isql
  - Make a request for a warm start of the Distribution Server
  - If applicable, use isql to delete the relevant row from DsDdThreadPool table

Troubleshooting DDIST and Order Manager GUI Problems

- **Troubleshooting:**

  process of identifying the source of problems on the basis of observed trouble symptoms

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Problems with data distribution can usually be traced to…**
  - **some part of the Data Server Subsystem**
    - » **Data Server Subsystem (DSS)**
    - » **Science Data Server**
    - » **Storage Management**
  - **problems in other ECS subsystems, including (but not necessarily limited to):**
    - » **Communications Subsystem (CSS)**
    - » **System Management Subsystem (MSS)**
    - » **Order Manager Subsystem (OMS)**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery**
  - Each request that crosses a client/server boundary is assigned a system-unique identifier referred to as an RPC ID
  - The RPC ID facilitates the automatic fault recovery events that occur whenever there is a client or server failure
  - As a request propagates through the system, each associated client/server exchange is assigned a unique RPC ID
    - » The RPC ID for each interaction is derived from the previous RPC ID received by the client for the request; consequently, all RPC IDs associated with a given request have a common portion that relates the various client/server calls to one another
    - » Given the previous RPC ID, clients consistently reproduce the same RPC ID that was submitted to the server on the subsequent event

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery (Cont.)**
  - The concept of reproducible RPC IDs is central to the ECS fault recovery capability
    - When requests are retried from client to server, they are always submitted with the same RPC ID that was used in the original submission of the request, even if either client or server has crashed between retries
  - The RPC ID is also central to the check-pointing aspect of fault recovery
    - As requests arrive at fault recovery-enabled servers, they are recorded in a persistent store (typically a database), tagged with the RPC ID
    - As the request is serviced, check-pointing state information may be updated in the persistent store, up to and including the request's completion status
    - This allows the servers to resume servicing from the last check-pointed state, particularly upon resubmission from a client

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery (Cont.)**
  - **DSS and OMS components check-point the following types of information:**
    - » **EcDsScienceDataServer - Asynchronous "acquire" requests that have been accepted for processing and subscription server event notifications**
    - » **EcDsHdfEosServer - None**
    - » **EcDsDistributionServer - Requests (which have been accepted for processing)**
    - » **EcDsStArchiveServer - "Store" and "retrieve" request state information**
    - » **EcDsStStagingDiskServer - Resource allocation and ownership for staging disks**
    - » **EcDsStFtpServer - Request state information**
    - » **EcDsStCacheManagerServer - None**
    - » **EcDsStDTFServer - None**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery (Cont.)**
  - **DSS and OMS components check-point the following types of information (Cont.):**
    - » **EcDsStRequestManagerServer - None**
    - » **EcOmOrderManager - Requests (which have been submitted)**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Fault Handling**
  - **Failure events are classified according to the following three severity levels:**
    - » **Fatal error**
    - » **Retry error**
    - » **Warning**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Fault Handling (Cont.)**
  - **Fatal error is returned when a request cannot be serviced, even with operator intervention**
    - **» For example, if a request is made to distribute data via ftp to a non-existent host, the request is failed**
  - **Retry error is a potentially recoverable error**
    - **» Normally, a retry error would be returned to the client only when the server cannot recover from the error automatically**
    - **» A retry error may require operator assistance**
    - **» For example, the Distribution Technician would use the DDIST GUI to manually request resumption of a request that had been "suspended with errors"**
  - **Warning is provided when operations can proceed but an unexpected circumstance was detected**
    - **» For example, if a client requests removal of a file but the file does not exist**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Fault Handling (Cont.)**
  - **Transient errors (such as network errors) are always retry errors**
    - » **In general, clients and servers that experience transient retry errors first attempt to recover by retrying the operation automatically**
    - » **One special case of this is "rebinding," which refers to the process by which a client automatically attempts to re-establish communication with a server in the event communication is disrupted**
    - » **The disruption may be caused by transient network failure, or by the server crashing or being brought down**
    - » **In any case, the client automatically attempts to reconnect to the server for a configurable period of time on a client-by-client basis**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Fault Handling (Cont.)**
  - **ECS processes encountering an error or receiving an error from a server request can either pass the error back to a higher-level client or present it to the operator for operator intervention**
  - **The specific fault handling policies for DSS and OMS client processes are shown in the table that follows**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

DSS and OMS Fault Handling Policies

Client Process	Fault Handling Policy
EcDsScienceDataServer **EcDsHdfEosServer**	**Retry errors:** Errors are retried a configurable number of times, then passed back to the calling client process unchanged. The default retry policy for Science Data Servers is "retry forever." For asynchronous "acquire" requests involving subsetting, retry errors encountered with the HDF servers are not returned to the client. Instead, the request is queued for future execution. **Fatal errors:** Errors are passed back to the calling client process. **NOTE:** Errors associated with asynchronous requests are logged but do not appear on any GUI. The Operator restarts HDF servers manually.
EcDsDistributionServer	Errors are presented to the operator via the Data Distribution Operator GUI. **Retry errors:** Errors are presented as "Suspended with Errors" and can be resumed by the operator. **Fatal errors:** Errors are presented as "Failed." For synchronous requests, fatal errors are also passed back to the calling client process. For asynchronous requests, fatal errors are sent as part of the e-mail notification.
EcDsStRequestManagerServer **EcDsStDTFServer**	**Retry errors:** Errors are passed back to the calling client process. **Fatal errors:** Errors are passed back to the calling client process.

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

DSS and OMS Fault Handling Policies (Cont.)

Client Process	Fault Handling Policy
EcOmOrderManager	**Retry errors:** Errors are retried a configurable number of times and then the request status is changed to “Operator Intervention” in the MSS database.

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Client Crash and Restart**
  - **When a client of a SDSRV or DDIST server crashes, the server (i.e., EcDsScienceDataServer, EcDsHdfEosServer, or EcDsDistributionServer) continues to service the requests that were in process at the time of the client's crash**
  - **When a client of a STMGT server (i.e., EcDsStArchiveServer, EcDsStRequestManagerServer, EcDsStCacheManagerServer, EcDsStPullMonitorServer, EcDsStFtpServer, EcDsStDTFServer, or EcDsStStagingDiskServer) crashes, the requests that were in process are cancelled by another client process and there is no impact to the outside requester server**
  - **The EcOmOrderManager does not care whether or not a client crashes**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Client Crash and Restart (Cont.)**
  - **When a client restarts in the ECS system, it sends a restart notification to each server with which it interacts**
    - » **Clients notify servers that they have come up either "cold" or "warm"**
    - » **Generally, the notification temperature sent to the server matches the temperature at which the client process is restarted**
    - » **However, there are some exceptions; for example:**

      EcDsScienceDataServer always notifies EcDsDistributionServer that it has performed a warm restart

      The default behavior for both EcDsHdfEosServer and EcDsStDTFServer is to send EcDsStRequestManagerServer cold restart notification

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Client Crash and Restart (Cont.)**
  - **When a client sends restart notification to the EcDsStRequestManagerServer, the server calls a stored procedure to clean up the old request and staging disk (if any) created by the client, based on whether it was a cold or warm start**
    - » **The Storage Management Servers are not directly notified when a restart has occurred**
    - » **The Storage Management Servers respond to the event according to the fact that a previous request has been marked as failed and any staging disk resources they have allocated have been released**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Client Crash and Restart (Cont.)**
  - **Default server behavior in response to "warm" startup notification from a client:**
    - » **Outstanding requests for the restarted clients remain available in the persistent store**
    - » **The outstanding requests may be resubmitted by the client, and are serviced to completion upon resubmission**
    - » **Associated resources are left allocated until the requests are completed**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Client Crash and Restart (Cont.)**
  - **Default server behavior in response to "cold" startup notification from a client:**
    - » **All outstanding requests for the restarted client are cancelled**
    - » **If the client resubmits any cancelled request using the same RPC ID (e.g., by pressing the Retry button from an operator GUI), it is failed with a fatal error due to the client cold startup notification**
    - » **Any resources associated with the cancelled requests are released and reclaimed by the system**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Client Crash and Restart (Cont.)**
  - **The following servers have some non-standard responses to startup notification:**
    - » **EcDsStArchiveServer**

      Warm Notification: Default server behavior (as previously described)

      Cold Notification: For partially completed Ingest operations, all files stored are removed (Partial granules are never permitted in the archive)
    - » **EcDsStStagingDiskServer**

      Warm Notification: All staging disks owned by the restarted client are retained, including temporary staging disks

      Cold Notification: All staging disks owned by the restarted client are released

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Server Crash and Restart**
  - **When a server crashes, clients cannot continue to submit requests for processing**
  - **Synchronous requests in progress result in a Distributed Computing Environment (DCE) exception being thrown back to the client process, which enters a rebinding failure recovery mode (as previously mentioned)**
  - **Attempts to submit requests while the server is down result in the client blocking until a communication timeout has been reached**
  - **Although DCE has been replaced by socket-based library calls (i.e., CCS Middleware), the DCE exception code is handled by the CCS Middleware**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Server Crash and Restart (Cont.)**
  - **When a server restarts, it may perform various resynchronization activities in order to recover from an unexpected termination**
  - **In the event of a server cold start or cold restart, the server typically cancels all outstanding requests and reclaims all associated resources**
  - **In general, existing request queues are retained for warm restarts and cleared for cold starts or cold restarts**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Server Crash and Restart (Cont.)**
  - **EcDsScienceDataServer- and EcDsHdfEosServer-specific activities upon start/restart:**
    - » **Warm Restart: Restart asynchronous "acquire" requests that were in progress before the crash; retain the queue of asynchronous "acquire" requests; it is expected that synchronous requests would be resubmitted by the respective senior client applications (i.e., PRONG or INGST); send event notifications to the Subscription Server for any services completed before the crash for which a subscribed event is registered but has not been sent to the Subscription Server**
    - » **Cold Start or Cold Restart: Purge the queue of asynchronous "acquire" requests; purge the queue of Subscription Server Event Notifications**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Server Crash and Restart (Cont.)**
  - **EcDsDistributionServer-specific activities upon start/restart:**
    - » **Warm Restart: Request Processing is restarted from the last check-pointed state**
    - » **Cold Start or Cold Restart: EcDsDistributionServer deletes all (prior) request information from its database**
  - **EcDsStArchiveServer-specific activities upon start/restart:**
    - » **Warm Restart: Retains existing request queues**
    - » **Cold Start or Cold Restart: For partially completed "store" requests, the files copied into the archive are removed; for partially completed "retrieve" requests, the access count is decremented in the read-only cache**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Server Crash and Restart (Cont.)**
  - **EcDsStCacheManagerServer-specific activities upon start/restart:**
    - » **Warm Restart: The contents of the read-only cache are synchronized with the database; discrepancies are logged and removed**
    - » **Cold Start or Cold Restart: All files are removed from the read-only cache; links to files in the read-only cache are left dangling**
  - **EcDsStStagingDiskServer-specific activities upon start/restart:**
    - » **Warm Restart: The set of staging disks in the staging area is synchronized with the database; discrepancies are logged and removed; existing request queues are cleared**
    - » **Cold Start or Cold Restart: All staging disks are removed**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Server Crash and Restart (Cont.)**
  - **EcDsStPullMonitorServer-specific activities upon start/restart:**
    - » **Warm Restart: The contents of the Pull Area and user request areas are synchronized with the database; discrepancies are logged and removed**
    - » **Cold Start or Cold Restart: All files in the Pull Area and all user request areas are removed**
  - **EcDsStFtpServer-specific activities upon start/restart:**
    - » **Warm Restart: Existing request queues are retained**
    - » **Cold Start or Cold Restart: Existing request queues are cleared**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Request Resubmission**
  - **Upon restarting a crashed client or server, requests are typically resubmitted**
  - **If the restarted process was started warm, the fault-recovery capabilities permit the server to resume processing of the request from its last check-pointed state**
    - » **This prevents needless repetition of potentially time-consuming activities**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Request Resubmission (Cont.)**
  - **EcDsScienceDataServer- and EcDsHdfEosServer-specific activities upon upon resubmission of a request:**
    - » **All requests are serviced as if they are new requests**
    - » **RPC IDs are generated automatically and reproducibly; consequently, the Science Data Server typically recreates the same allocation requests on a resubmission; this can trigger special logic to handle requests for which an allocated staging disk has been transferred to the Data Distribution Server**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Request Resubmission (Cont.)**
  - **EcDsDistributionServer-specific activities upon upon resubmission of a request:**
    - **If previously submitted and completed, the request status is returned based on the check-pointed request status**
    - **Otherwise, the client request thread is synchronized with the worker thread actually servicing the request**
  - **EcDsStArchiveServer-specific activities upon upon resubmission of a request:**
    - **The request is restored from the last check-pointed state**
    - **For "store" requests, copies into the archive are resumed from the last file copied**
    - **For "retrieve" requests, the entire "retrieve" request is reprocessed; however, files previously retrieved for the request are, in all likelihood, still in the read-only cache**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Request Resubmission (Cont.)**
  - **EcDsStCacheManagerServer- and EcDsStFtpServer-specific activities upon upon resubmission of a request:**
    - » **If previously submitted and completed, the request status is returned based on the check-pointed request status**
    - » **Otherwise, the request is processed anew**
  - **EcDsStStagingDiskServer-specific activities upon upon resubmission of a request:**
    - » **For staging disk allocation, the results are returned to the client if the client resubmits the allocation request under which the disk was created**
  - **EcDsStPullMonitorServer- and EcDsStDTFServer-specific activities upon upon resubmission of a request:**
    - » **The resubmitted request is processed as if it were a new request**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Fault Recovery: Request Resubmission (Cont.)**
  - **EcOmOrderManager-specific activities upon upon resubmission of a request:**
    - » **EcOmOrderManager uses a different RPC ID for request resubmission**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Trouble Symptoms**
  - Review the trouble symptoms
  - Check the status of relevant hosts/servers (as necessary)
  - Check log files (as necessary)
  - Take action to correct the problem(s)
  - If the problem cannot be identified and fixed without help within a reasonable period of time, the appropriate response is to call the help desk and submit a trouble ticket in accordance with site Problem Management policy

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Troubleshooting table**
  - **describes actions to be taken in response to some common Data Distribution and Order Manager GUI problems**
  - **if the problem cannot be identified and fixed without help within a reasonable period of time, call the help desk and submit a trouble ticket in accordance with site Problem Management policy**

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

Symptom	Response
Unable to log in to any host (e.g., Operations Workstation, g0acs02).	Check with the Operations Controller/System Administrator to ensure that the host is “up."
GUI or web browser (as applicable) not displayed when the start-up script/command has been properly invoked.	Ensure that the DISPLAY variable was set properly. [For detailed instructions refer to the procedure for **Launching the Data Distribution Operator and Storage Management Control GUIs** (previous section of this lesson).]
Error message associated with the Data Distribution Operator GUI.	Refer to Table 7, Data Distribution Operator GUI User Messages (adapted from the corresponding table in 609-CD-610-003, *Release 6B Operations Tools Manual for the ECS Project*) and Table 8, Storage Management User Messages (adapted from DsShErrorMessages.txt and DsStErrorMessages.txt in the /usr/ecs/*MODE*/CUSTOM/data/DSS directory on the DSS hosts).
Error message associated with the Storage Management Control GUI.	Refer to Table 8, Storage Management User Messages (adapted from DsShErrorMessages.txt and DsStErrorMessages.txt in the /usr/ecs/*MODE*/CUSTOM/data/DSS directory on the DSS hosts).
Error message associated with the Order Manager GUI.	Refer to Table 9, Order Manager GUI User Messages (adapted from the corresponding table in 609-CD-610-003, *Release 6B Operations Tools Manual for the ECS Project*).

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

Symptom	Response
Request status change to "Suspended with Errors," indicating a data distribution failure.	1. If a suspended request is an FtpPush request to a remote host (e.g., ftp.averstar.com), check the connection to the remote host. [For detailed instructions refer to the procedure for **Checking the Connection to the Remote FTP Host** (subsequent section of this lesson).] 2. Ensure (e.g., using EcCsIdPingServers) that it is possible to connect to the necessary hosts and servers (listed in Table 10). [For detailed instructions refer to the procedure for **Checking Connections to Hosts/Servers** (subsequent section of this lesson).] 3. If it is not possible to connect to any needed host(s)/server(s), notify the Operations Controller/System Administrator to check the hosts/servers and bring them back up if necessary. 4. If hosts/servers are all "up," notify the Operations Controller/System Administrator to have the STMGT servers bounced (shut down and immediately restarted). 5. When all relevant servers are "up," resume processing of the suspended request. [For detailed instructions refer to the procedure for **Suspending/Resuming Data Distribution Requests** (previous section of this lesson).] 6. If processing does not resume, refer to the procedure for **Recovering from a Data Distribution Failure** (subsequent section of this lesson).

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

Symptom	Response
Other problems.	Check the log files (e.g., EcDsDdistGui.ALOG, EcDsDistributionServer.ALOG, EcDsStRequestManagerServer.ALOG, EcDsStStagingDiskServerDIP1.ALOG) in the /usr/ecs/*MODE*/CUSTOM/logs directory of the applicable host for error messages. [For detailed instructions refer to the procedure for **Checking Log Files** (subsequent section of this lesson).]

Hosts, Servers, Clients etc. Relevant to DDIST and OM

HOST	SERVER/CLIENT/OTHER SOFTWARE
Sun internal server (e.g., x0acs06)	Distribution Server (EcDsDistribution Server) 8mm Server (EcDsSt8MMServer) Storage Management Request Manager (EcDsStRequestManagerServer) Staging Disk Server (EcDsStStagingDiskServer) Granule Deletion Process (EcDsGranuleDelete) Science Data Server (EcDsScienceDataServer) Science Data Server Client (EcDsScienceDataServerClient) Subscription Server (EcSbSubServer)
Operations Workstation (e.g., x0acs02)	Data Distribution Operator GUI (EcDsDdistGui) Storage Management Control GUI (EcDsStmgtGui) Science Data Server GUI (EcDsSdSrvGui)
Access/Process Coordinators (APC) Server (e.g., x0acg01)	Archive Server (EcDsStArchiveServer) Cache Manager Servers (EcDsStCacheManagerServer) (including Pull Area Manager) FTP Server (EcDsStFtpServer) Staging Disk Server (EcDsStStagingDiskServer)
FSMS Server (e.g., x0drg01)	HDF EOS Server (EcDsHdfEosServer) Archive Server (EcDsStArchiveServer) Cache Manager Server (EcDsStCacheManagerServer) FTP Server (EcDsStFtpServer) Staging Disk Server (EcDsStStagingDiskServer)

Hosts, Servers, Clients, etc. Relevant to DDIST and OM (Cont.)

HOST	SERVER/CLIENT/OTHER SOFTWARE
Ingest Server (e.g., x0icg01)	Name Server (EcCsIdNameServer) Registry Server (EcCsRegistry)
Data Pool Server (e.g., x0dps01)	Order Manager GUI (EcOmGuiHomePage.pl)

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **DDIST Troubleshooting Procedures**
  - Checking Connections to Hosts/Servers
  - Recovering from a Data Distribution Failure
  - Responding to Requests that Exceed the Distribution Request Threshold
  - Checking the Request Manager Server Debug Log
  - Checking the Science Data Server Log Files
  - Checking the Archive Server Log Files
  - Checking the Staging Disk
  - Checking the Staging Disk ALOG File
  - Checking the Space Available in the Staging Area
  - Checking Log Files
  - Checking Database Connections

Troubleshooting DDIST and Order Manager GUI Problems (Cont.)

- **Procedure (Checking Connections to Hosts/Servers):**
  - **Access a terminal window logged in to the Distribution Server host (Sun internal server host)**
  - **Change directory to the utilities directory (/usr/ecs/MODE/CUSTOM/utilities)**
  - **At the command line prompt enter EcCsIdPingServers *MODE***
  - **Observe the results displayed on the screen to determine whether connections can be made with the necessary hosts and servers**
  - **Ping the servers again (EcCsIdPingServers *MODE*)**
  - **If it is not possible to connect to any needed local host(s)/server(s), notify the Operations Controller/System Administrator to check the hosts/servers and bring them back up if necessary**

Recovering from a Data Distribution Failure

- **Recovering from a data distribution failure**
  - **Operator intervention may be required when there is a data distribution fault or error (e.g., failure of storage management to acquire granules from the archive)**
  - **Distribution Technician may use several sources for troubleshooting information**
    - » **Data Distribution Operator GUI Distrib'n Requests tab**
    - » **log files on various host machines**

Recovering from a Data Distribution Failure (Cont.)

- **Procedure**
  - Review the trouble symptoms
  - Check for requests that exceed the distribution request threshold
  - Check the connection to the remote host (if applicable)
  - Check for an acquire failure
  - Check appropriate log files as necessary
  - Take action to correct the problem(s)
  - Verify that distribution request processing has resumed

Responding to Requests that Exceed the Dist. Request Threshold

- When a distribution request exceeds the corresponding distribution request threshold (e.g., FtpPushThreshold or FtpPullThreshold), the request is suspended in DDIST with the following error mnemonic:
  - DsEDdXLargeRequest

Responding to Requests that Exceed the Dist. Request Threshold

- **Procedure**
  - Record (e.g., write down) the Request ID (as displayed on the Distrib'n Requests tab of the Data Distribution Operator GUI) for the request that exceeds the distribution request threshold
  - Cancel the request
  - Contact User Services to determine whether or not the user's request should be processed
  - If the request should be completed, determine whether User Services or Distribution will partition and resubmit the request
  - If the request should be completed and Distribution should partition the request, partition and resubmit the request

Checking the Connection to the Remote FTP Host

- A distribution request for FtpPush of data to a remote host (e.g., ftp.averstar.com) shows a status of “Suspended with Errors”
  - It is suspected that it may not be possible to connect to the remote ftp host

Checking the Connection to the Remote FTP Host (Cont.)

- **Procedure**
  - Access a terminal window logged in to the appropriate host
  - Use the appropriate script to ping the remote ftp host
  - Make an anonymous ftp connection to the remote ftp host
  - Notify the remote system's point of contact of any problem (if applicable)
  - Wait until the communication problem has been resolved (if applicable)
  - Return to Step 1 (if applicable)
  - Resume the affected distribution request(s) (after successful ftp test)

Handling an Acquire Failure

- **Procedure**
  - **Check the Request Manager Server Debug Log**
  - **Check the Science Data Server ALOG File**
  - **Check the Archive Server ALOG File**
  - **Check the Staging Disk**
  - **Check the Staging Disk ALOG File**
  - **Check the Space Available in the Staging Area**

Checking Log Files

- **Log files can provide indications of the following types of problems:**
  - **DDIST- or STMGT-related problems**
  - **Communication problems**
  - **Database problems**
  - **Lack of disk space**

Checking Log Files (Cont.)

- **Procedure**
  - **Access a terminal window logged in to the appropriate host**
  - **Change directory to the directory containing the data distribution log files**
    - » **/usr/ecs/*MODE*/CUSTOM/logs**
  - **Review log file to identify problems**
  - **Respond to problems**

Checking Database Connections

- **Storage management/data distribution shared database**
  - **Repository of data concerning data distribution requests**
  - **If applications are unable to connect to the database, the data distribution request data cannot be retrieved or displayed on the GUI**
  - **Checking the database connections is a logical step in trying to isolate the following types of problems:**
    - » **GUI does not display data**
    - » **Display does not refresh**

Checking Database Connections

- **Procedure**
  - **Submit a request to the Database Administrator to identify the values for the following parameters associated with the EcDsDistributionServer:**
    - **DBName**
    - **DBServer**
    - **DBMaxConnections**
  - **Use the interactive structured query language (isql) sp_who command to obtain a list of connections**
  - **Use the isql sp_configure command to obtain a list of the number of connections for which the database has been configured**
  - **Compare the number of actual connections (results of sp_who) with the number of connections for which the database has been configured (results of sp_configure "user connections")**
  - **Notify the Database Administrator of problems**

PDS Operations

- **Operator Tools**
  - **PDS Operator Interface (PDSOI)**
  - **PDSIS Operator Interface (PDSIS OI)**
  - **PDS Job Monitor**
  - **Rimage CD Production Software**
    - » **Data Publisher**
    - » **Production Server**
  - **PDS Quality Check GUI**
  - **PDS Maintenance Module**
  - **PDSIS Maintenance Module**
  - **PDS Cleanup Manager**
  - **PDSIS Cleanup Manager**

PDS Operations (Cont.)

- **PDS Operator Interface (PDSOI)**
  - **Started up using either a shell script (pdsoi_prod.sh) or using an alias (pdsoi)**
  - **Script makes a connection to the Oracle database**
    - » **Connection is made using the Oracle SQL*Net communication mechanism**
  - **Script ensures that all operators log on to Oracle with the same usercode and password**
  - **Usercode has privileges against only those tables used specifically by PDS**
    - » **Any data needed to produce the product is included in the accessible tables**
  - **Generates several reports dealing with order status and jewel-case inserts**

PDS Operations (Cont.)

- PDS Operator Interface (PDSOI) (Cont.)
  - Communications between the OI module and the product generation code are handled via ASCII files
    - » OI module generates appropriate ASCII parameter files
  - PDSOI module looks for returning ASCII files from the product generation code on a timed basis and processes them appropriately
  - Source data needed to produce a customer's request can come from several sources
    - » Might come from offline media that is mounted by an operator, from a mass storage device, or from some value-added processing system
    - » In the ECS implementation of PDS the data are retrieved from local disks where PDSIS will have had ECS stage the data

PDS Operations (Cont.)

- PDS Operator Interface (PDSOI) (Cont.)
  - PDS back end consists of a set of production modules
    - » Production module (PM) is a piece of software that generates products for one particular product line
    - » For example, if the PDS operator activates an order with a product code of G001, the OI invokes the corresponding production module (e.g., “genericout”), which in turn generates the media to ship to the customer
    - » PMs and OI communicate through status files that allow the back end to indicate either a success or failure to the front end
    - » For the ECS implementation, only one generic production module (i.e., “genericout”) was used initially
    - » Some additional production modules have been developed

PDS Operations (Cont.)

- PDS Operator Interface (PDSOI) (Cont.)
  - Product generation code within PDS generates customer products on magnetic tape or recordable optical media (could just as well prepare them for FTP delivery)
  - Product generation software is started (via a top-level PDS process called "PDSTOP") by a system call from the PDSOI when a job is activated
    - » A production parameter file (PPF) is created in the $PDSROOT directory for the current PDS user ID
    - » File name is <order number>_<first unit number>.ppf (for example: 0110101310123_00001.ppf)

PDS Operations (Cont.)

- PDS Operator Interface (PDSOI) (Cont.)
  - Each product generation module generates an order status file for passing back to the OI
  - File is named <OI ID>_<PPF KEY>.status (e.g., PDS1_test_0110101310123_00001.status) and is placed within the $PDSROOT/status directory after product completion
  - The OI ID in the status file name is composed of…
    - » PDS Machine name
    - » underscore
    - » Console ID
  - PPF Key is made up of…
    - » order number
    - » underscore
    - » zero-padded unit number

PDS Operations (Cont.)

- **PDS Operator Interface (PDSOI) (Cont.)**
  - **There is one record per line in the status file for each unit that was produced in the specified job run**
    - » **Each line has the format |<ORDNUM>|<unit>|<status>|<media_id>|<ncopies>|1 | where ORDNUM is the order number from the PDT_PDSINFO table, unit is the unit processed, status is the resulting status of the unit, media_id is the unique media identification number, and ncopies is the number of copies produced for the media_id**
    - » **Lines in the status file are sorted by media_id**
  - **Relevant instance of PDSOI picks up the status files that pertain to the OI ID of that instance and determines the status of the units**
    - » **'F' for units that are successfully produced**
    - » **'G' for units that had errors**

PDS Operations (Cont.)

- **PDS Operator Interface (PDSOI) (Cont.)**
  - **If the output product is CD or DVD, the PDS generation software creates a label on the CD or DVD itself**
  - **For an 8mm or DLT product the PDS generation software creates a label file that is sent to a label printer**

PDS Operations (Cont.)

- **PDSIS Operator Interface (PDSIS OI)**
  - **Used in communicating with the PDSIS database**
  - **One of the principal uses of the PDSIS OI is marking a job shipped**
    - » **When the media have been produced, verified, and assembled with the packing lists and shipping labels**
  - **Another use is investigating the status of orders outside of PDSSA**
  - **Started up using either a shell script (pdsisoi_*mode*.sh) or an alias (pdsisoi)**
  - **Script makes a connection to the Oracle database**
    - » **Ensures that all operators log on to Oracle with the same usercode and password**
    - » **Usercode has privileges against only those tables used specifically in PDS operations**

PDS Operations (Cont.)

- **PDS Job Monitor**
  - **Intended to be used as a complement to the PDSOI**
  - **Lists the PDS jobs that are currently being processed by the production modules and indicates the specific stage of processing that each running job has reached**
    - » **On request it displays the job log or the production parameter file (.ppf) file for any running job**
  - **Displays information about available disk space and workload on the Rimage CD generation systems**
  - **Can be used in verifying consistency between the jobs that the PDS Operator Interface reports as being active and the jobs that actually are active**
    - » **For instance, if the PDS machine crashes and is brought back up, after the Operator Interface window is started, all jobs that were active at the crash will be shown in an active state (although none are actually running)**

PDS Operations (Cont.)

- **Rimage CD Production Software**
  - **Data Publisher**
  - **Production Server**

PDS Operations (Cont.)

- **Rimage CD Production Software (Cont.)**
  - **Data Publisher**
    - » **Runs on the Rimage PC**
    - » **Watches the PDS job control directory (i.e., /pdssa/rimage_jobcontrol) on the PDSSA RAID looking for files to be transferred to the Rimage PC**
    - » **PDS job control directory is mapped to a network drive on the Rimage PC**
    - » **Files are identified by a ".ORD" extension to the filename**
    - » **".ORD" extension indicates that the data are ready to be transferred**
    - » **Transfers the data via ftp to a hard disk drive on the Rimage PC, updates the Rimage PowerTools log file (also located in the job control directory), and changes the ".ORD" extension to a ".dn0" extension**

PDS Operations (Cont.)

- **Rimage CD Production Software (Cont.)**
  - **Data Publisher (Cont.)**
    - » **Updates the PowerTools log file when the production is complete, which in turn places the order in QC-HOLD on PDSOI**
    - » **Then PDS prints summaries and jewel-case inserts**
  - **Production Server**
    - » **Runs on the Rimage PC**
    - » **Does an initial hardware check on the Rimage CD/DVD burners, internal printer and the media carousel**
    - » **Produces the media (writing the data to disk) after Data Publisher has transferred the data (via ftp) onto one of the Rimage PC hard disk drives (e.g., the E: drive)**

PDS Operations (Cont.)

- **PDS Quality Check GUI**
  - **Provides a means of selecting a verification drive for checking a disk or tape when performing a QC check**
  - **Reads the directories on the disk or tape and creates a listing that can be printed**
    - » **Verification report indicates whether the data have been recorded on the disk or tape**

PDS Operations (Cont.)

- **PDS Maintenance Module**
  - **Contains Oracle Forms, which are used to look at and update the data within the database used by the PDSOI**
    - » **Access to the forms is normally restricted to lead operators**
  - **UNIX script is used for starting up the PDS Maintenance Module**
    - » **Script is in the $PDSROOT/run directory (e.g., /data1/pds_it/run)**
    - » **Script is named pdsmaint_mode.sh (e.g., pdsmaint_it.sh) and has an alias set to "pds_maint”**
    - » **Operator just has to type "pds_maint" to bring up the PDS Maintenance login window**

PDS Operations (Cont.)

- **PDS Maintenance Module (Cont.)**
  - **Support maintenance for the PDS Maintenance Module requires an Oracle usercode and password that are different from those used to run the PDSOI module**
    - » **Additional level of security is intended to prevent unauthorized personnel from modifying the maintenance tables or performing functions that require advanced training and knowledge**
  - **Like the PDSOI the maintenance module resides on the PDS machine**

PDS Operations (Cont.)

- **PDSIS Maintenance Module**
  - **Contains Oracle Forms, which are used to look at and update the data within the database tables used by the PDSIS OI**
    - » **Access to the forms is normally restricted to lead operators**
  - **UNIX script is used for starting up the PDSIS Maintenance Module**
    - » **Script is in the $PDSROOT/run directory (e.g., /usr/local/pds_it/run or /data1/pds_it/run)**
    - » **Script is named pdsismaint_*mode*.sh (e.g., pdsismaint_it.sh) and has an alias set to "pdsismaint"**
    - » **Operator just has to type "pdsismaint" to bring up the PDSIS Maintenance login window**

PDS Operations (Cont.)

- **PDSIS Maintenance Module (Cont.)**
  - **Support maintenance for the PDSIS Maintenance Module requires an Oracle usercode and password that are different from those used to run the PDSIS OI module**
    - » **Additional level of security is intended to prevent unauthorized personnel from modifying the maintenance tables or performing functions that require advanced training and knowledge**
  - **Like the PDS Maintenance Module the PDSIS Maintenance Module resides on the PDS machine**

PDS Operations (Cont.)

- **PDS and PDSIS Cleanup Managers**
  - **The large number of files generated by PDSIS and PDSSA activities would overwhelm the system if some of the files were not removed from the working directories on a fairly frequent basis**
    - » **However, some files may be needed for some period of time to permit troubleshooting and recovery of jobs in case of problems**
  - **PDS Cleanup Manager and PDSIS Cleanup Manager are GUIs that are used for specifying file cleanup strategies for PDSSA files or PDSIS files:**
  - **PDSSA**
    - » **Summary files**
    - » **Log files**
    - » **Status files**
    - » **Label files**
  - **PDSIS**
    - » **Product request files**
    - » **Product result files**
    - » **Socket log files**

PDS Operations (Cont.)

- **PDS and PDSIS Cleanup Managers (Cont.)**
  - Generate or modify Bourne shell scripts (i.e., cleanup.sh and pdsiscleanup.sh) that implement the file cleanup strategies
  - May modify the crontab file to adjust the time intervals for deletion or archiving of files
  - Are not used very often, especially after a manageable retention period has been determined for PDS files and has been implemented through the cleanup scripts and crontab file

Starting Up PDS

- **PDS Start-Up Activities**
  - **Starting up PDS involves starting the following processes:**
    - » **Starting the PDSIS Server and PDSIS Cron**
    - » **Starting the PDS Cron**
    - » **PDS Operator Interface (PDSOI)**
    - » **PDSIS Operator Interface (PDSIS OI)**
    - » **PDS Job Monitor**
    - » **Rimage CD Production Software (Data Publisher and Production Server)**
    - » **PDS Quality Check GUI**
    - » **PDS Maintenance Module (as needed)**
    - » **PDSIS Maintenance Module (as needed)**

Starting Up PDS (Cont.)

- It is generally good practice to use multiple workspaces in PDS operations (due to the large number of GUIs)
  - PDSIS workspace:
    - » PDSIS OI
    - » PDSIS Maintenance Module (when necessary)
  - PDSSA workspace:
    - » PDSOI
    - » PDS Job Monitor
    - » PDS Quality Check GUI
    - » PDS Maintenance Module (when necessary)
  - DDIST workspace:
    - » Data Distribution Operator GUI

Starting Up PDS (Cont.)

- **Starting the PDSIS Server and PDSIS Cron: Procedure**

  NOTE: A PDSIS user ID (e.g., pdsis, pdsis_ts1, pdsis_ts2) is used in this procedure

  – **Access a terminal window logged in to the PDS Server host using the appropriate PDSIS user ID for the operating mode**

  – **Type ps -ef | grep *userID* then press Return/Enter**

  – **Type cd *path***

  – **Type the command to start the PDSIS Server (if applicable)**

  – **Type the command to start the PDSIS Cron jobs (if applicable)**

  – **Verify that the crons were started (if applicable)**

Starting Up PDS (Cont.)

- **Starting the PDS Cron: Procedure**

  NOTE: A PDS user ID (e.g., pds, pds_st, pds_it) is used in this procedure

  – **Access a terminal window logged in to the PDS Server host using the appropriate PDS user ID for the operating mode**

  – **Type cd *path***

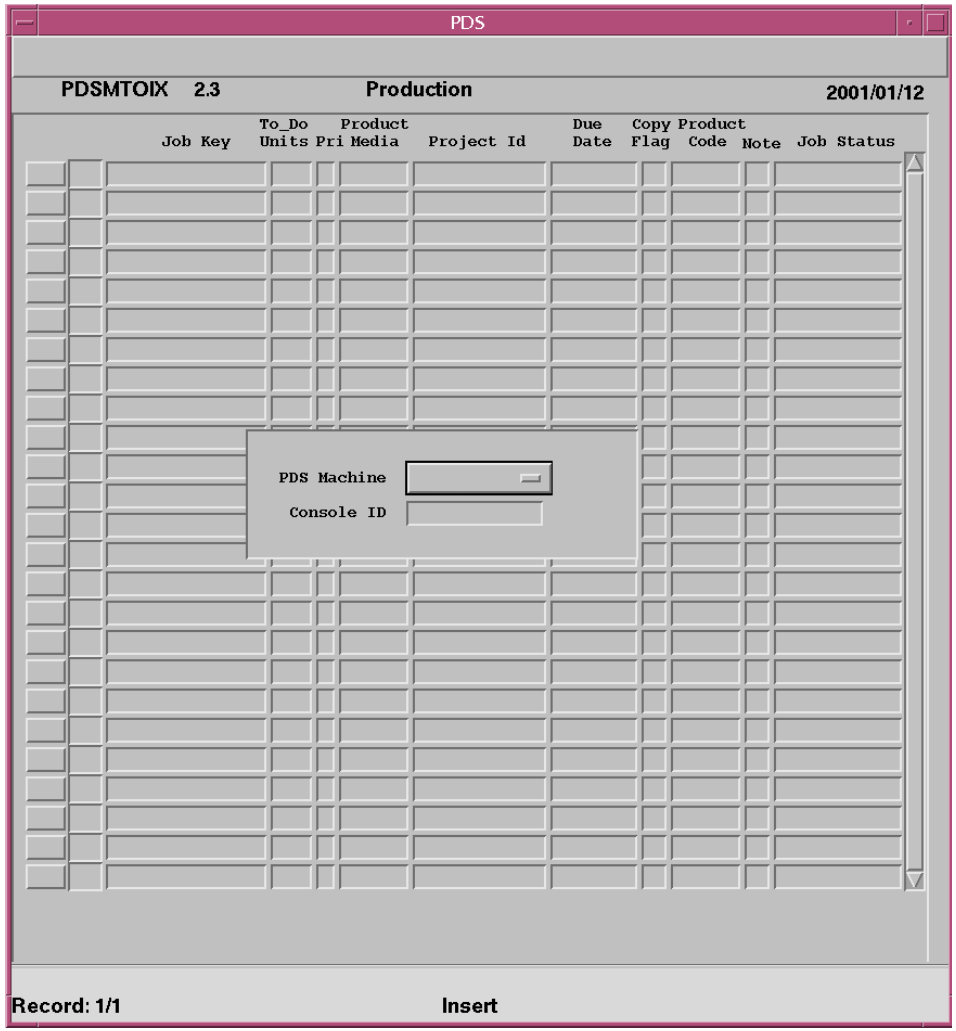
  – **Type the command to start the PDS Cron jobs**

  – **Verify that the crons were started**

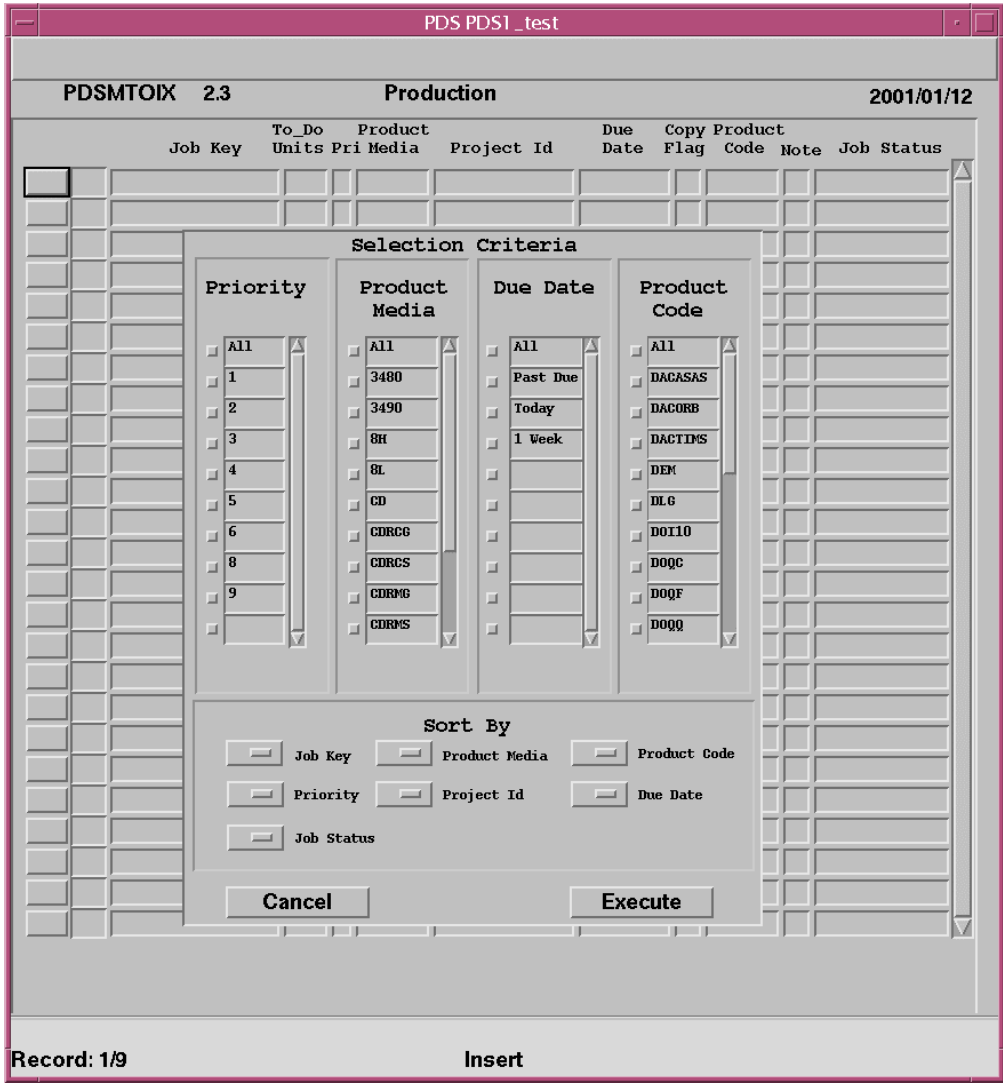
Starting Up PDS (Cont.)

- **Starting the PDS Operator Interface (PDSOI): Procedure**
  - **Access a terminal window logged in to the PDS Server host**
  - **Type pdsoi**
  - **Select the PDS machine**
  - **Type the appropriate console ID**
  - **Specify job selection criteria**
  - **Click on the Execute button**
  - **Set timer intervals [separate procedure]**

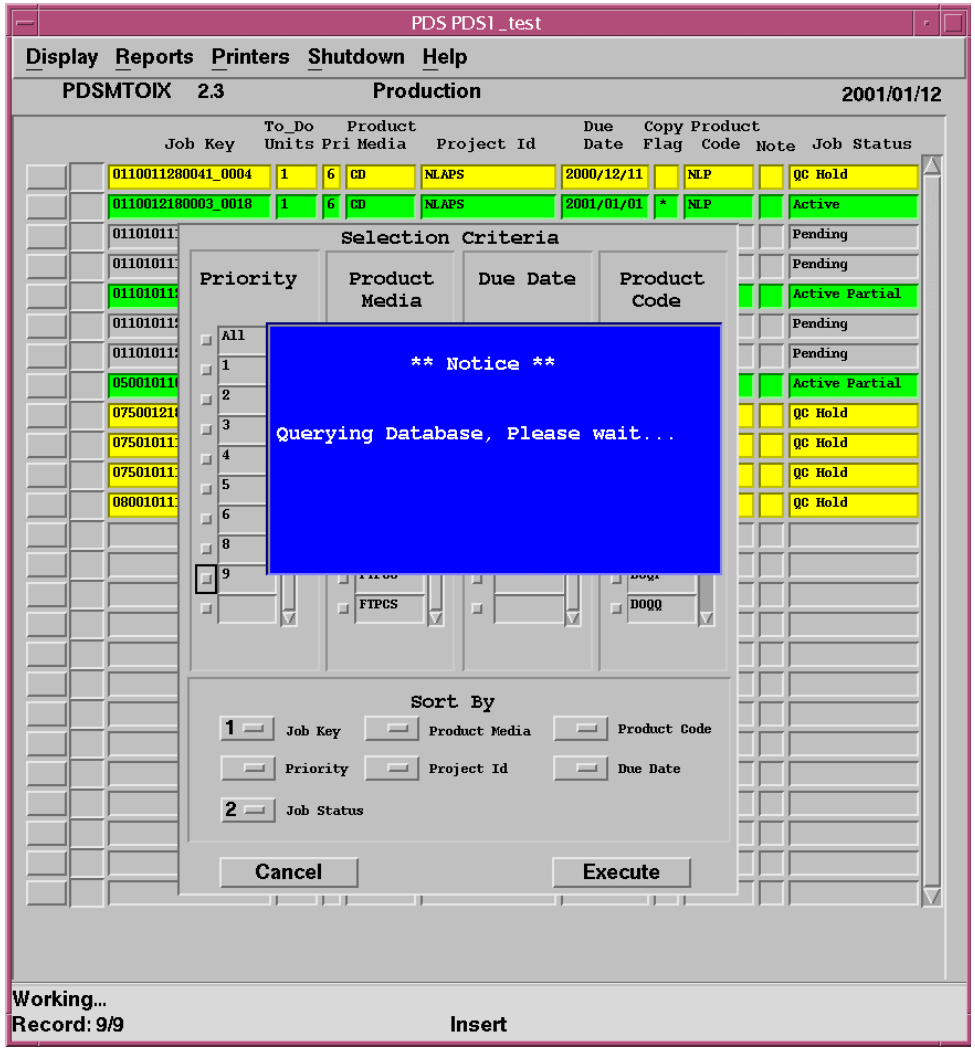
PDS Operator Interface (PDSOI): Startup Window



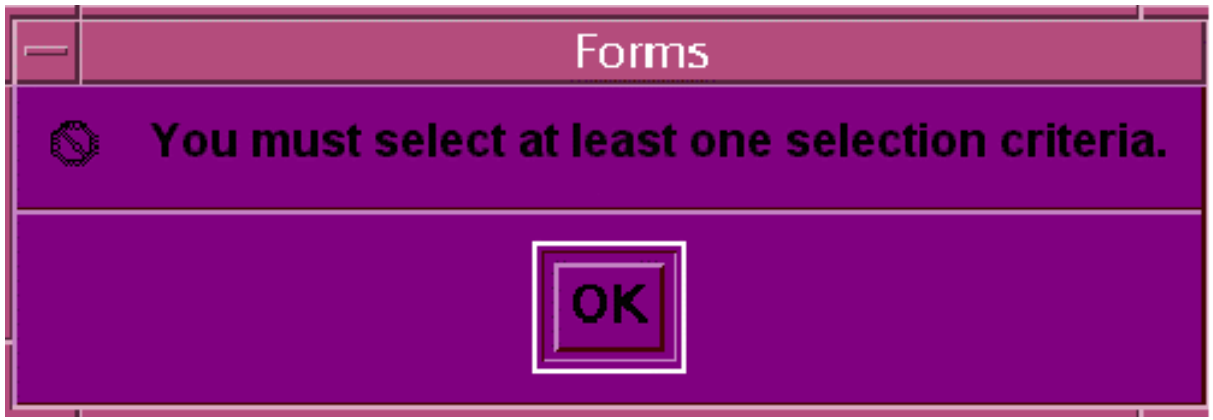
PDSOI: Selection Criteria Screen



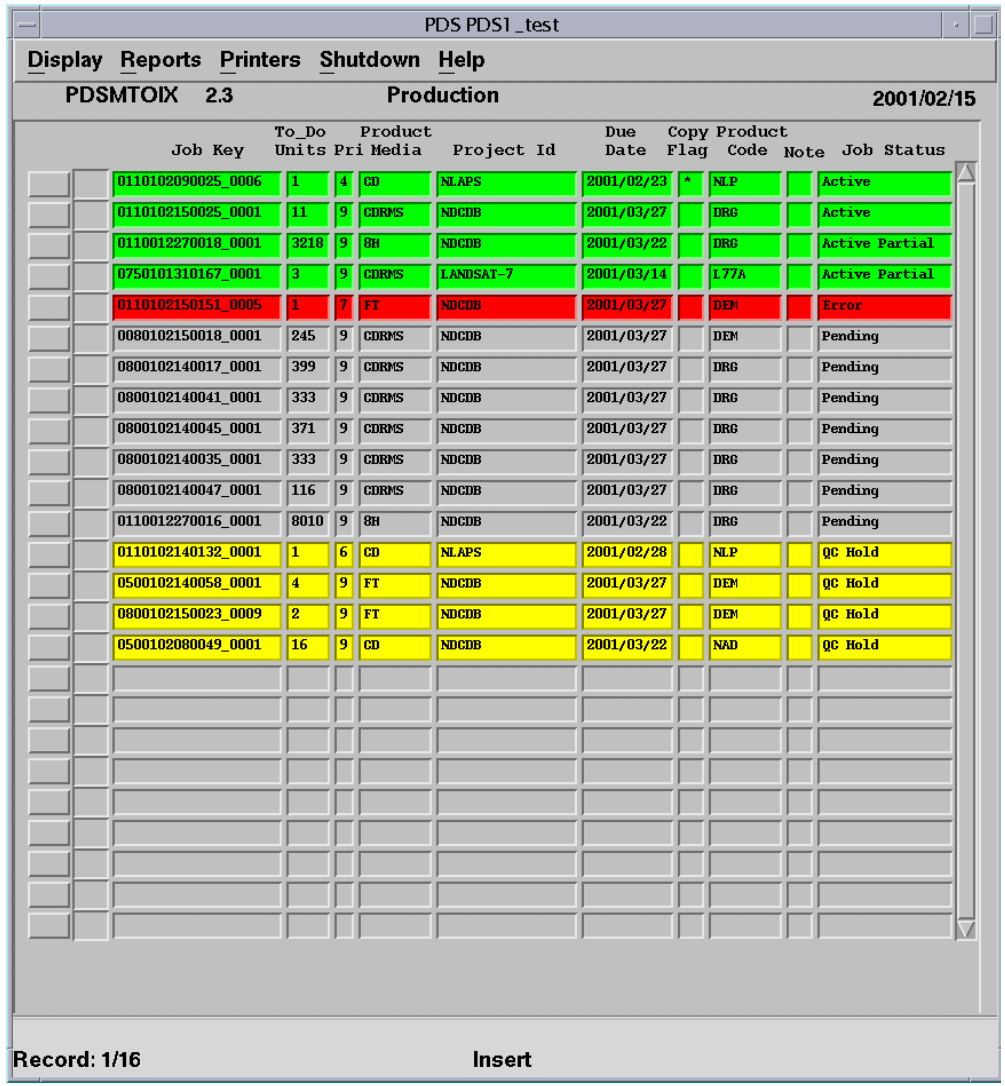
PDSOI: Querying Database Notice



Selection Error Dialogue Box



PDSOI: Main OI Screen

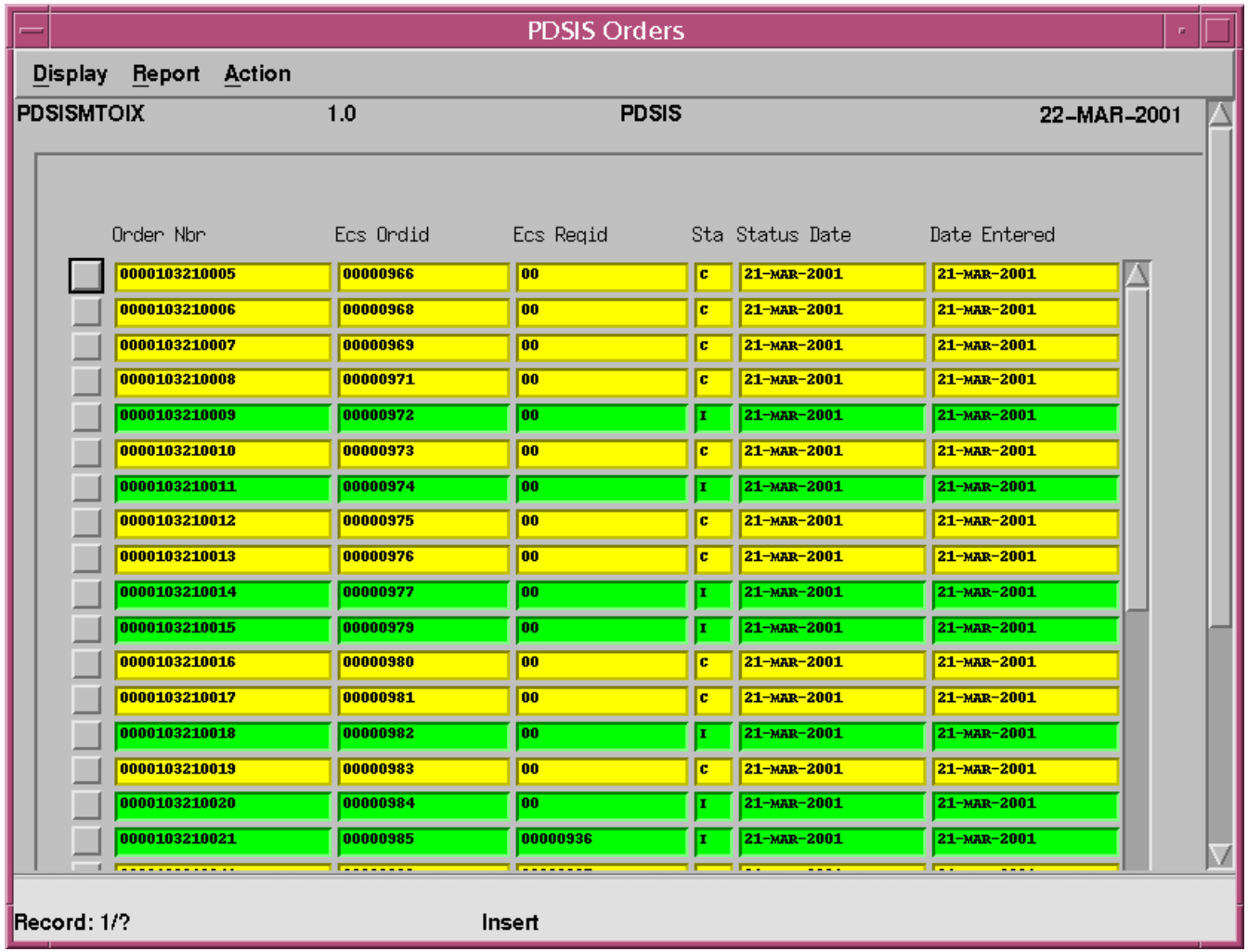


Job Key	To_Do Units	Pri	Product Media	Project Id	Due Date	Copy Flag	Product Code	Note	Job Status
0110102090025_0006	1	4	CD	NLAPS	2001/02/23	*	NLP		Active
0110102150025_0001	11	9	CDRMS	NDCDB	2001/03/27		DRG		Active
0110012270018_0001	3218	9	8H	NDCDB	2001/03/22		DRG		Active Partial
0750101310167_0001	3	9	CDRMS	LANDSAT-7	2001/03/14		L7A		Active Partial
0110102150151_0005	1	7	FT	NDCDB	2001/03/27		DEM		Error
0080102150018_0001	245	9	CDRMS	NDCDB	2001/03/27		DEM		Pending
0800102140017_0001	399	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140041_0001	333	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140045_0001	371	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140035_0001	333	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140047_0001	116	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0110012270016_0001	8010	9	8H	NDCDB	2001/03/22		DRG		Pending
0110102140132_0001	1	6	CD	NLAPS	2001/02/28		NLP		QC Hold
0500102140058_0001	4	9	FT	NDCDB	2001/03/27		DEM		QC Hold
0800102150023_0009	2	9	FT	NDCDB	2001/03/27		DEM		QC Hold
0500102080049_0001	16	9	CD	NDCDB	2001/03/22		NAD		QC Hold

Starting Up PDS (Cont.)

- **Starting the PDSIS Operator Interface (PDSIS OI): Procedure**
  - **At the UNIX command line prompt type cd then press Return/Enter**
    - » **The alias cd changes the current directory to the PDS root directory for the PDS user ID of the log-in**
  - **Type pdsisoi**

PDSIS Operator Interface (PDSIS OI) Main Screen



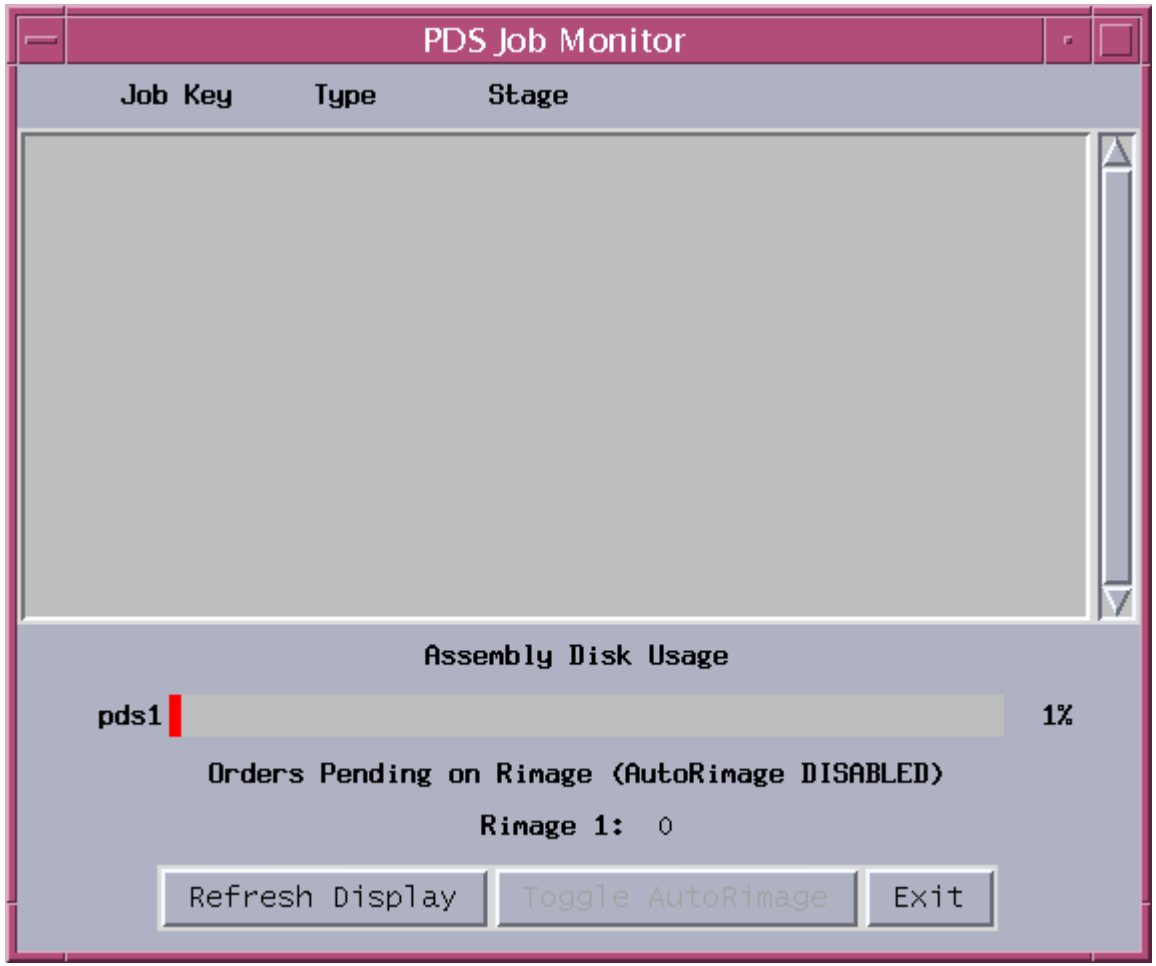
Starting Up PDS (Cont.)

- **Starting the PDS Job Monitor**
  - **The PDS Job Monitor Main Window is intended to run continually in conjunction with the PDS Main OI Screen**
  - **Hypothetically, there is no limit to the number of PDS Job Monitors that can be running at once**
    - » **However, since the application consumes a small amount of resources, care should be taken to not run multiple instances excessively**

Starting Up PDS (Cont.)

- **Starting the PDS Job Monitor: Procedure**
  - **At the UNIX command line prompt type cd then press Return/Enter**
    - » **The alias cd changes the current directory to the PDS root directory for the PDS user ID of the log-in**
  - **Type cd jobmon**
  - **Type jobmonitor &**

Job Monitor Main Window



Starting Up PDS (Cont.)

- **Starting the Rimage CD Production Software**
  - **The following Rimage CD production software programs have to be started on the Rimage personal computer (PC):**
    - » **Data Publisher**
    - » **Production Server**

Starting Up PDS (Cont.)

- **Starting the Rimage CD Production Software (Cont.)**
  - **A Network File System (NFS) mount is needed in order to see the job control directory (e.g., /pdssa/rimage_jobcontrol) on the PDS system**
    - » **When the Windows NT system for the Rimage PC is set up, the PDS job control directory on the PDS Server host (e.g., x0dig06) is typically mapped to the PC's Z: drive**
    - » **Data Publisher watches the job control directory looking for order files that describe data to be transferred (so they can be written to disk)**
    - » **The order files are identified by a ".ORD" extension, which indicates that data are ready to be transferred**
    - » **Data Publisher transfers the data (i.e., image files) via ftp from PDSSA to the "CD-R_Images" folder (directory) on one of the Rimage PC hard disk drives (e.g., the E: drive) and changes the ".ORD" extension on the order file to a ".dn0" extension**

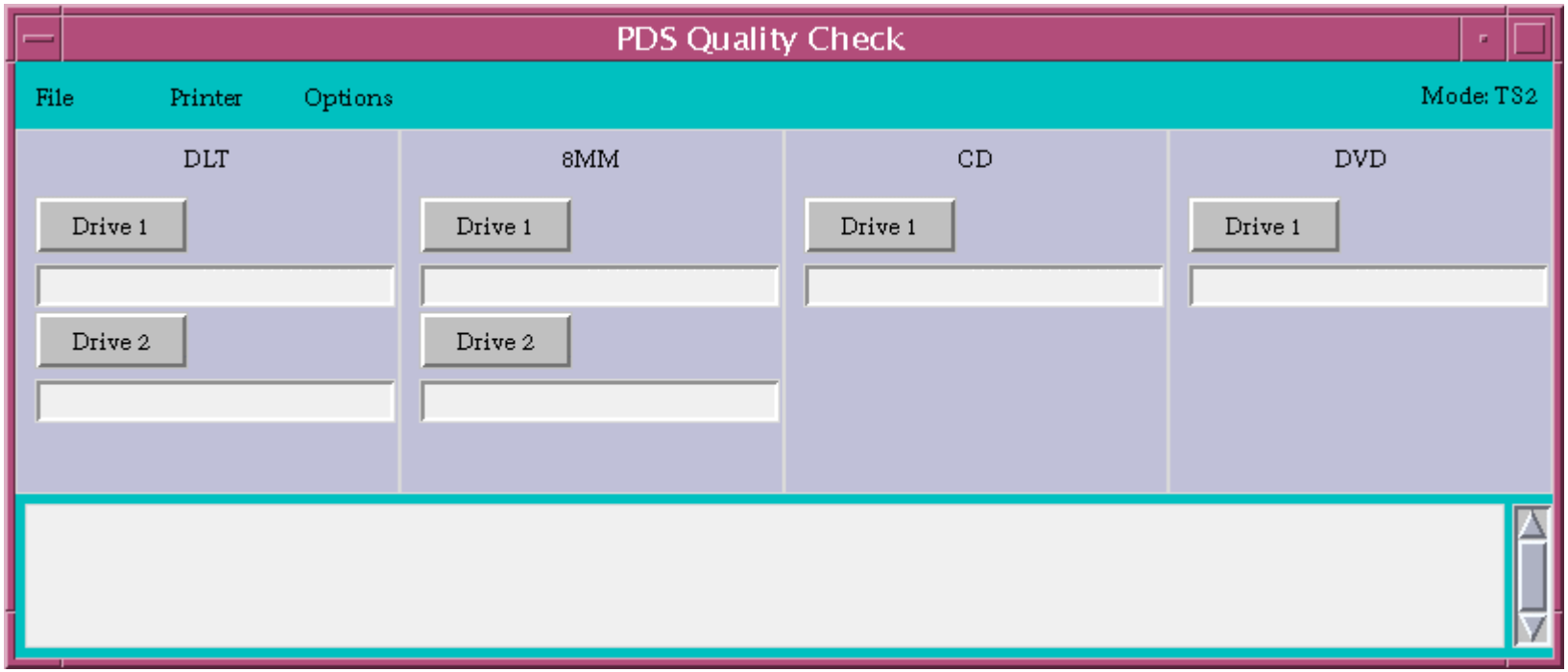
Starting Up PDS (Cont.)

- **Starting the Rimage CD Production Software: Procedure**
  - **Double-click on the Data Publisher icon on the PC desktop**
  - **Double-click on the Production Server icon on the PC desktop**
    - » **The Production Server does an initial hardware check on the Rimage CD/DVD burners, internal printer and the media carousel**
  - **Click on the Start button in the Production Server window**

Starting Up PDS (Cont.)

- **Starting the PDS Quality Check GUI: Procedure**
  - **At the UNIX command line prompt type cd $PDSROOT/run/verify then press Return/Enter**
    - » **Change the current directory to the PDS root directory "verify" subdirectory for the PDS user ID of the log-in**
  - **Type EcPdSaQCGui &**
  - **Check the printer selection and print options**
  - **Modify the printer selection and print options if necessary**

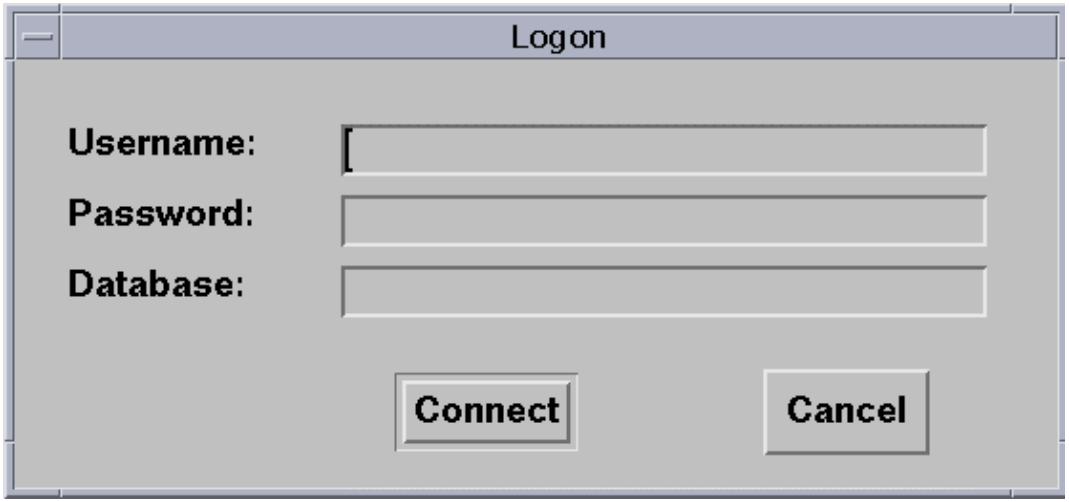
PDS Quality Check GUI



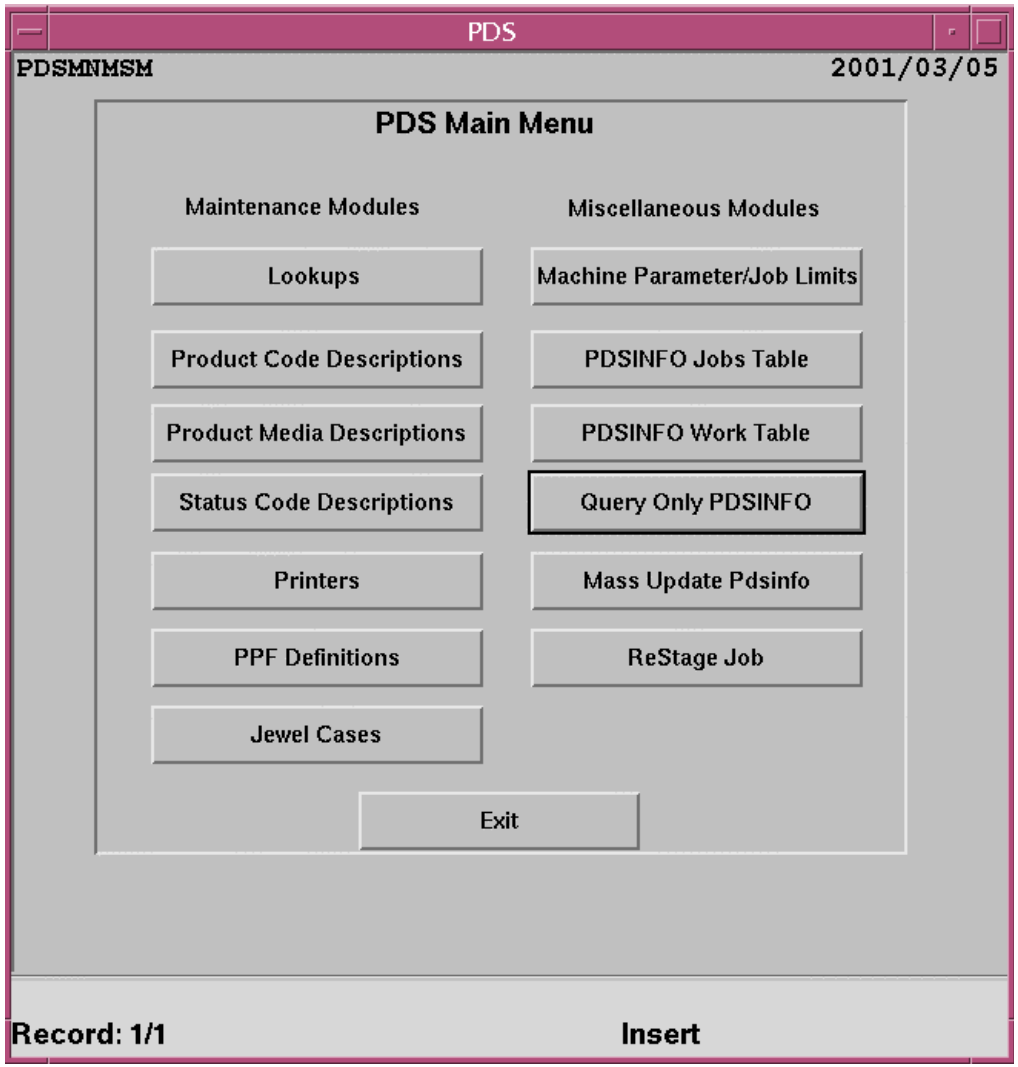
Starting Up PDS (Cont.)

- **Starting the PDS Maintenance Module: Procedure**
  - **At the UNIX command line prompt type cd then press Return/Enter**
    - » **The alias cd changes the current directory to the PDS root directory for the PDS user ID of the log-in**
  - **Type pds_maint**
  - **Enter userID in the Username field of the PDS Maintenance Module Login Screen**
  - **Enter Password in the Password field of the PDS Maintenance Module Login Screen**
    - » **It is not necessary to fill in the Database field on the PDS Maintenance Module Login Screen; it defaults to the correct database if left blank**
  - **Click on the Connect button**

PDS Maintenance Module: Login Screen



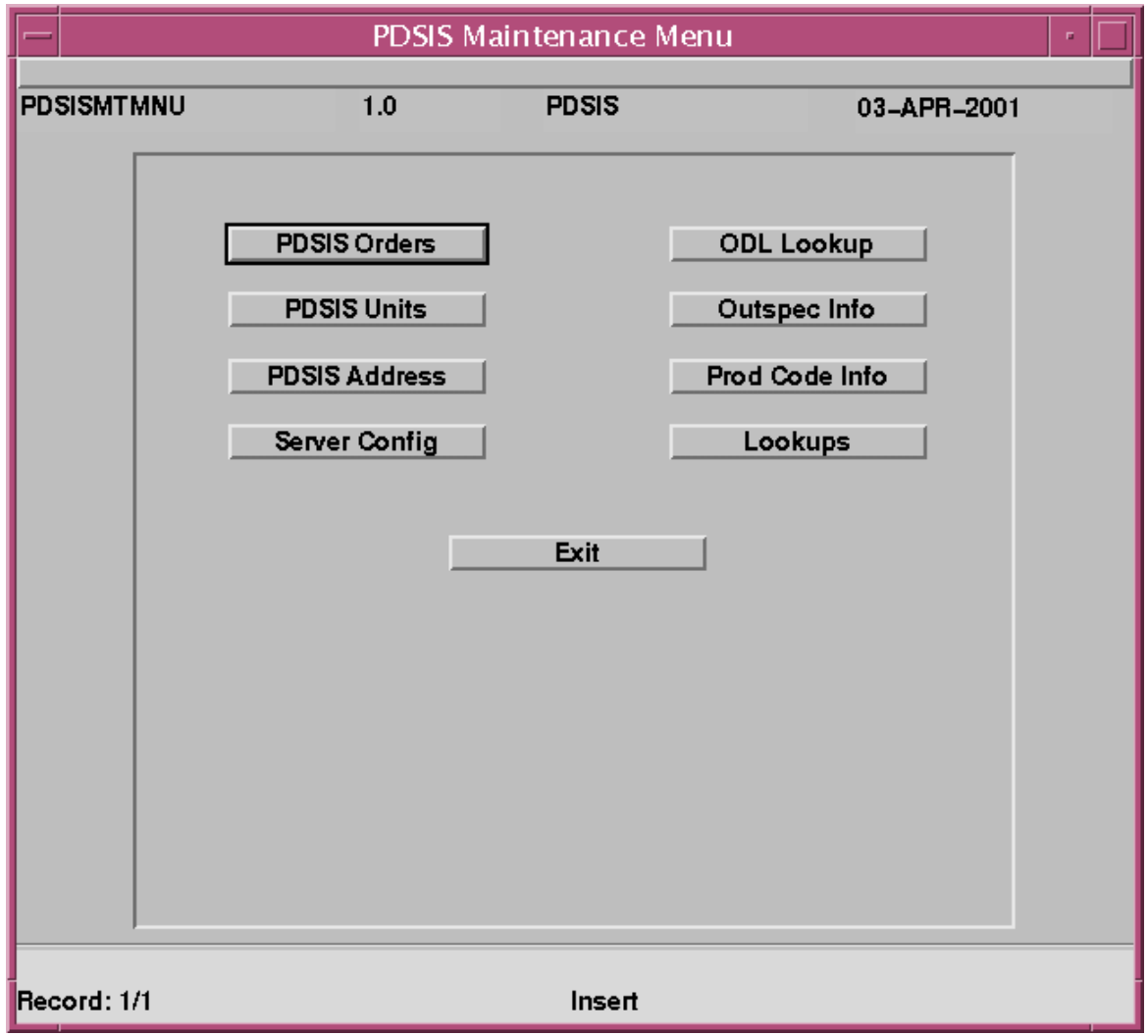
PDS Maintenance Module: Main Menu



Starting Up PDS (Cont.)

- **Starting the PDSIS Maintenance Module: Procedure**
  - **At the UNIX command line prompt type cd then press Return/Enter**
    - » **The alias cd changes the current directory to the PDS root directory for the PDS user ID of the log-in**
  - **Type pdsismaint**
  - **Enter userID in the Username field of the PDSIS Maintenance Module Login Screen**
  - **Enter Password in the Password field of the PDSIS Maintenance Module Login Screen**
    - » **It is not necessary to fill in the Database field on the PDSIS Maintenance Module Login Screen; it defaults to the correct database if left blank**
  - **Click on the Connect button**

PDSIS Maintenance Module: Main Menu



Shutting Down PDS

- **PDS Shutdown Activities**
  - **Shutting down PDS involves shutting down the following processes:**
    - **PDS Maintenance Module**
    - **PDS Job Monitor**
    - **PDS Operator Interface (PDSOI)**
    - **Rimage CD Production Software (Data Publisher and Production Server)**
    - **PDS Quality Check GUI**
    - **PDSIS Maintenance Module**
    - **PDSIS Operator Interface (PDSIS OI)**
    - **PDSIS Server (if necessary)**

Shutting Down PDS (Cont.)

- **Shutting Down the PDS Maintenance Module: Procedure**
  - **If one of the maintenance modules is being displayed, click on the Exit button at the bottom of the window**
  - **If a dialogue box is displayed with a message requesting whether changes made to the data on the form should be saved, click on the Yes button**
  - **Click on the Exit button at the bottom of the PDS Maintenance Module Main Menu window**

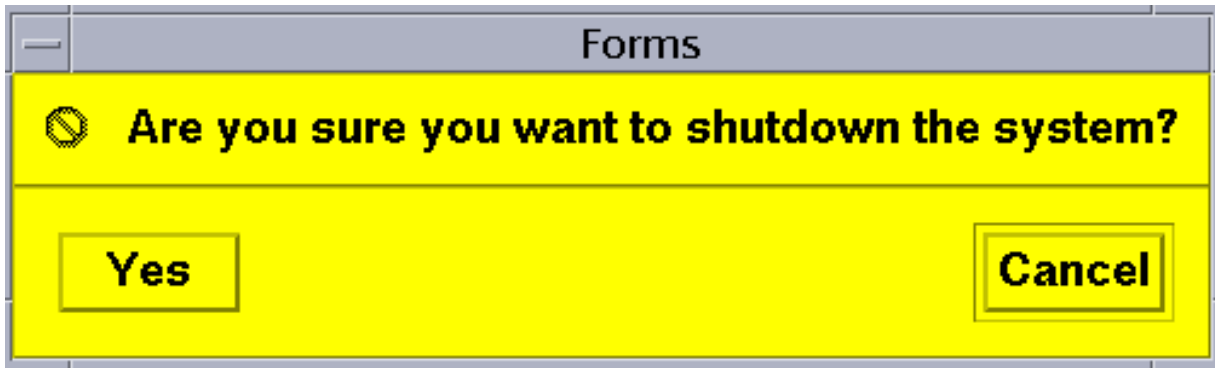
Shutting Down PDS (Cont.)

- **Shutting Down the PDS Job Monitor: Procedure**
  - **Click on the Exit button at the bottom of the Job Monitor Main Window**

Shutting Down PDS (Cont.)

- **Shutting Down the PDS Operator Interface (PDSOI): Procedure**
  - **Select Shutdown → Stop All Jobs from the pull-down menu**
  - **Click on the Yes button on the Shutdown Confirmation dialogue box**

PDSOI: Shutdown Confirmation



Shutting Down PDS (Cont.)

- **Shutting Down the Rimage CD production software: Procedure**
  - **Click on the X in the box at the upper right-hand corner of the Rimage Production Server window**
  - **Click on the X in the box at the upper right-hand corner of the Rimage Data Publisher window**

Shutting Down PDS (Cont.)

- **Shutting Down the PDS Quality Check GUI: Procedure**
  - **Select File → Exit from the pull-down menu on the PDS Quality Check GUI**

Shutting Down PDS (Cont.)

- **Shutting Down the PDSIS Maintenance Module: Procedure**
  - **If one of the maintenance modules is being displayed, click on the Exit button at the bottom of the window**
  - **If a dialogue box is displayed with a message requesting whether changes made to the data on the form should be saved, click on the Yes button**
  - **Click on the Exit button at the bottom of the PDSIS Maintenance Module Main Menu window**

Shutting Down PDS (Cont.)

- **Shutting Down the PDSIS Operator Interface (PDSIS OI): Procedure**
  - **Select Action → Shutdown from the pull-down menu**

Shutting Down PDS (Cont.)

- **Shutting down the PDSIS Server: Procedure**

  NOTE: A PDSIS user ID (e.g., pdsis, pdsis_ts1, pdsis_ts2) is used in this procedure

  – **Access a terminal window logged in to the PDS Server host using the appropriate PDSIS user ID for the operating mode**

  – **Type ps -ef | grep java | grep *userID* then press Return/Enter**

  – **Type kill -15 *processID* then press the Return/Enter key**

  – **Verify that the PDSIS Server is no longer running (type ps -ef | grep java | grep *userID* then press Return/Enter)**

Monitoring/Controlling Product Processing Using PDS

- **PDSSA Monitoring Activities**
  - **Monitoring/controlling product processing using PDS (PDSSA) involves the following activities (among others):**
    - » **Determining the status of a job and/or taking action with respect to a job (using the Main OI Screen)**
    - » **Determining the status of units associated with a particular job or taking action with respect to units associated with a particular job (using the OI Detail Screen)**
    - » **Activating a job**
    - » **Stopping a job [suspending a job] using the Main OI Screen display**
    - » **Terminating a job using the Job Monitor Main Window**
    - » **Responding to a status of QC-Hold (performing a QC check or verification)**
    - » **Completing a job**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.)**
  - **Monitoring/controlling product processing using PDS involves the following activities (among others) (Cont.):**
    - » **Entering notes about a job**
    - » **Promoting a job**
    - » **Generating PDS production reports**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): Main OI Screen**
  - **Action Button [not labeled]**
    - » **Allows access to a list of actions that can be taken with respect to the job**
  - **Job Stopped [not labeled]**
    - » **"STOP" is displayed in the field if the job has been stopped**
  - **Job Key**
    - » **Unique label for the job composed of the order number, an underscore and a zero-padded unit number of the first unit of the job**
  - **To_Do Units**
    - » **Number of units left in the job in either a pending, active or QC_hold state**

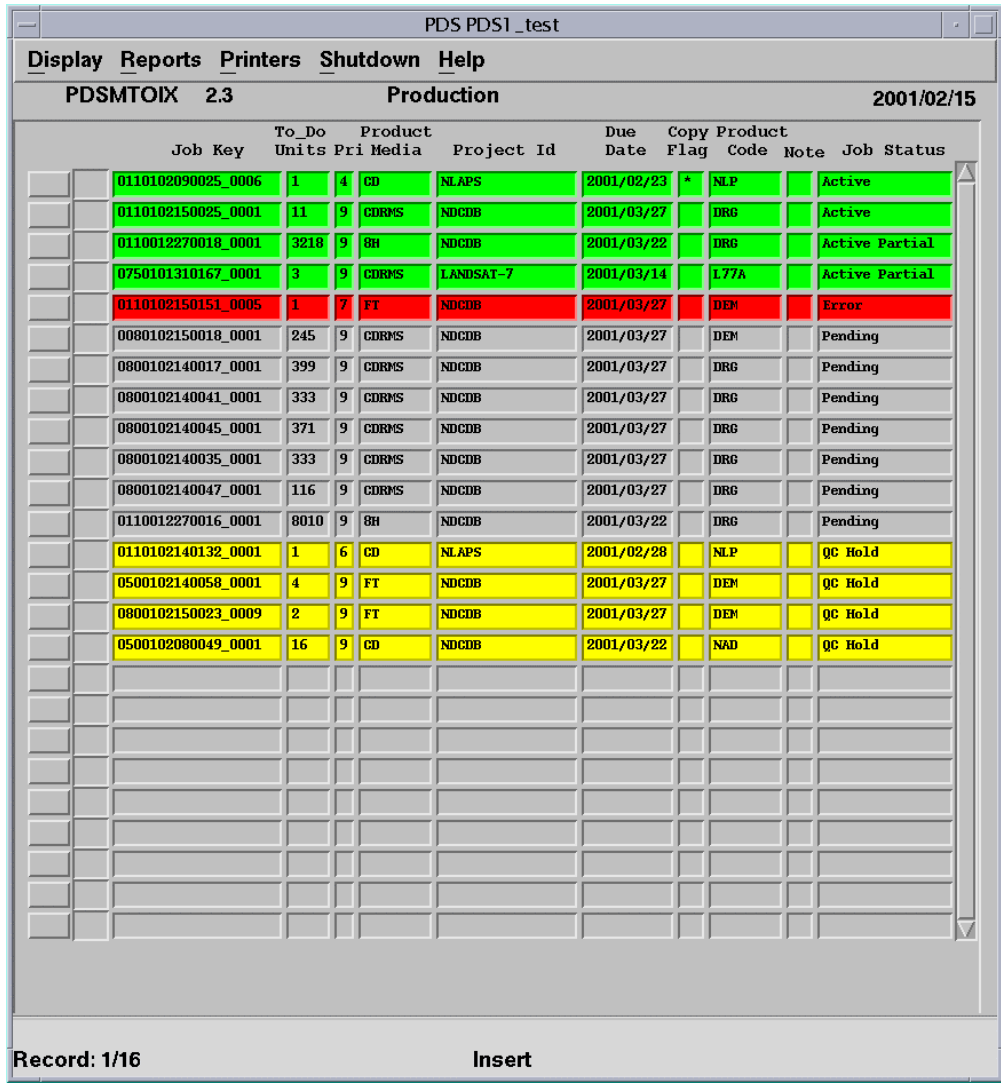
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): Main OI Screen (Cont.)**
  - **Pri**
    - » **Priority of the job from 1 to 9, with "1" the highest priority**
  - **Product Media**
    - » **The pds_description of the output specifications**
  - **Project Id**
    - » **An optional field that indicates whether there is a particular project associated with the job**
  - **Due Date**
    - » **Date that the order is due to the customer**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): Main OI Screen (Cont.)**
  - **Copy Flag**
    - » **An "*" is displayed if the total number of copies does not equal the total number of units (Used if multiple copies are needed for a specific unit)**
  - **Product Code**
    - » **The pds_description of the product code**
  - **Note**
    - » **An "*" is displayed if there is a current note for the job**
  - **Job Status**
    - » **Status of the job**

PDSOI: Main OI Screen



Job Key	To_Do Units	Pri	Product Media	Project Id	Due Date	Copy Flag	Product Code	Note	Job Status
0110102090025_0006	1	4	CD	NLAPS	2001/02/23	*	NLP		Active
0110102150025_0001	11	9	CDRMS	NDCDB	2001/03/27		DRG		Active
0110012270018_0001	3218	9	8H	NDCDB	2001/03/22		DRG		Active Partial
0750101310167_0001	3	9	CDRMS	LANDSAT-7	2001/03/14		L7A		Active Partial
0110102150151_0005	1	7	FT	NDCDB	2001/03/27		DEM		Error
0080102150018_0001	245	9	CDRMS	NDCDB	2001/03/27		DEM		Pending
0800102140017_0001	399	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140041_0001	333	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140045_0001	371	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140035_0001	333	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0800102140047_0001	116	9	CDRMS	NDCDB	2001/03/27		DRG		Pending
0110012270016_0001	8010	9	8H	NDCDB	2001/03/22		DRG		Pending
0110102140132_0001	1	6	CD	NLAPS	2001/02/28		NLP		QC Hold
0500102140058_0001	4	9	FT	NDCDB	2001/03/27		DEM		QC Hold
0800102150023_0009	2	9	FT	NDCDB	2001/03/27		DEM		QC Hold
0500102080049_0001	16	9	CD	NDCDB	2001/03/22		NAD		QC Hold

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): OI Detail Screen (for the selected individual PDS job)**
  - **Job Key**
    - » **The dynamically generated identifier tying the units in the job together**
  - **Copies**
    - » **Number of copies the customer wants for each unit**
  - **Pri**
    - » **Priority code for the job**
  - **Product Media**
    - » **PDS's description of the output specifications**
  - **Due Date**
    - » **Date that the job needs to be delivered to the customer**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): OI Detail Screen (for the selected individual PDS job) (Cont.)**
  - **Product Code**
    - » **PDS's description of the product code**
- **Monitoring/Controlling Product Processing Using PDS (Cont.): OI Detail Screen (for each unit within the selected PDS job)**
  - **"Select" button [not labeled].**
    - » **Used for selecting or deselecting each individual unit to which an action (e.g., "Activate") will be applied.**
  - **Unit #**
    - » **Unit number**

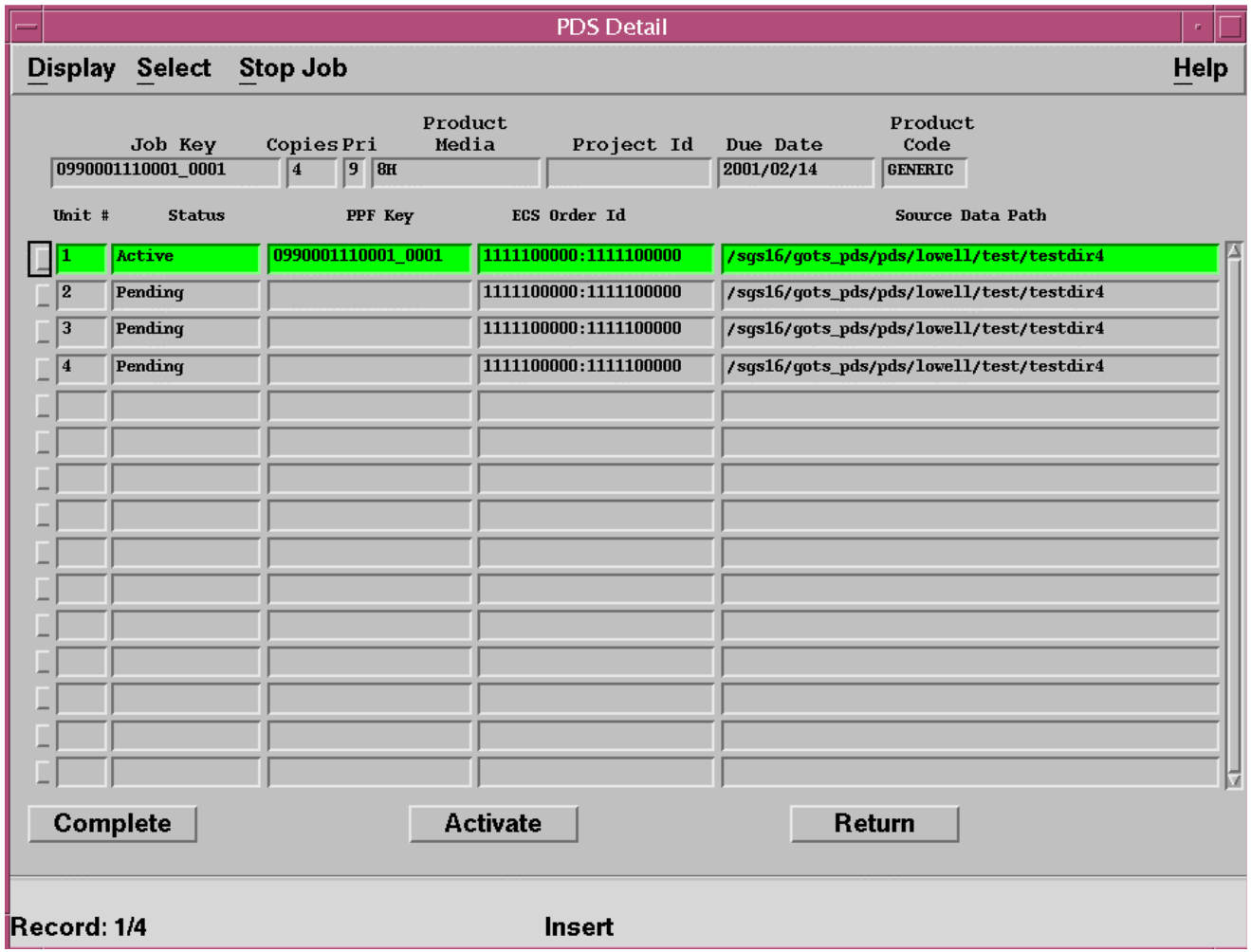
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): OI Detail Screen (for each unit within the selected PDS job)**
  - **Status**
    - » **PDS's description of the status**
  - **PPF Key**
    - » **Blank if the unit is in pending status; otherwise the PPF Key for the unit is displayed**
    - » **Ties to the .ppf file used during the product generation process**
    - » **Composed of the order number, an underscore and the zero-padded unit number**
  - **ECS Order ID**
    - » **ECS Order Id (blank if there is no ECS Order ID in the PDT_PDSINFO table)**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): OI Detail Screen (for each unit within the selected PDS job)**
  - **Source Data Path**
    - » **Location of the source data needed to produce the customer's product**
    - » **Could be either a media storage identifier in the digital archive or a storage location on a mass media device or a location on a remote machine**

PDSOI: OI Detail Screen



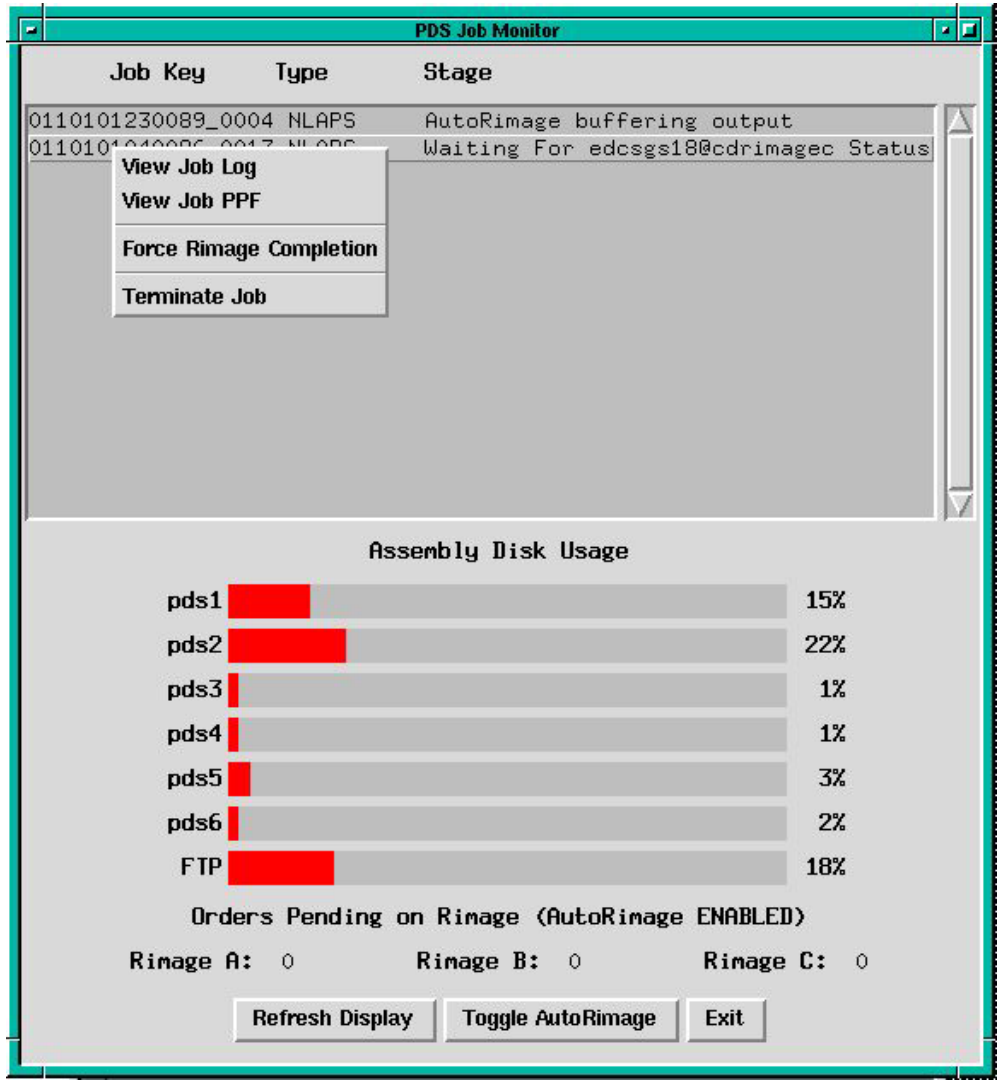
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): Job Monitor Main Window**
  - **Running Jobs**
    - » **Job Key**
    - » **Type [of product]**
    - » **Stage [what the job is currently doing (if the information is available)]**
  - **Assembly Disk Usage**
    - » **Graphical displays of the free space remaining on the PDS assembly and ftp staging disks**
    - » **Intended to give the operator advance warning when one (or more) of the disks is running low on available space**

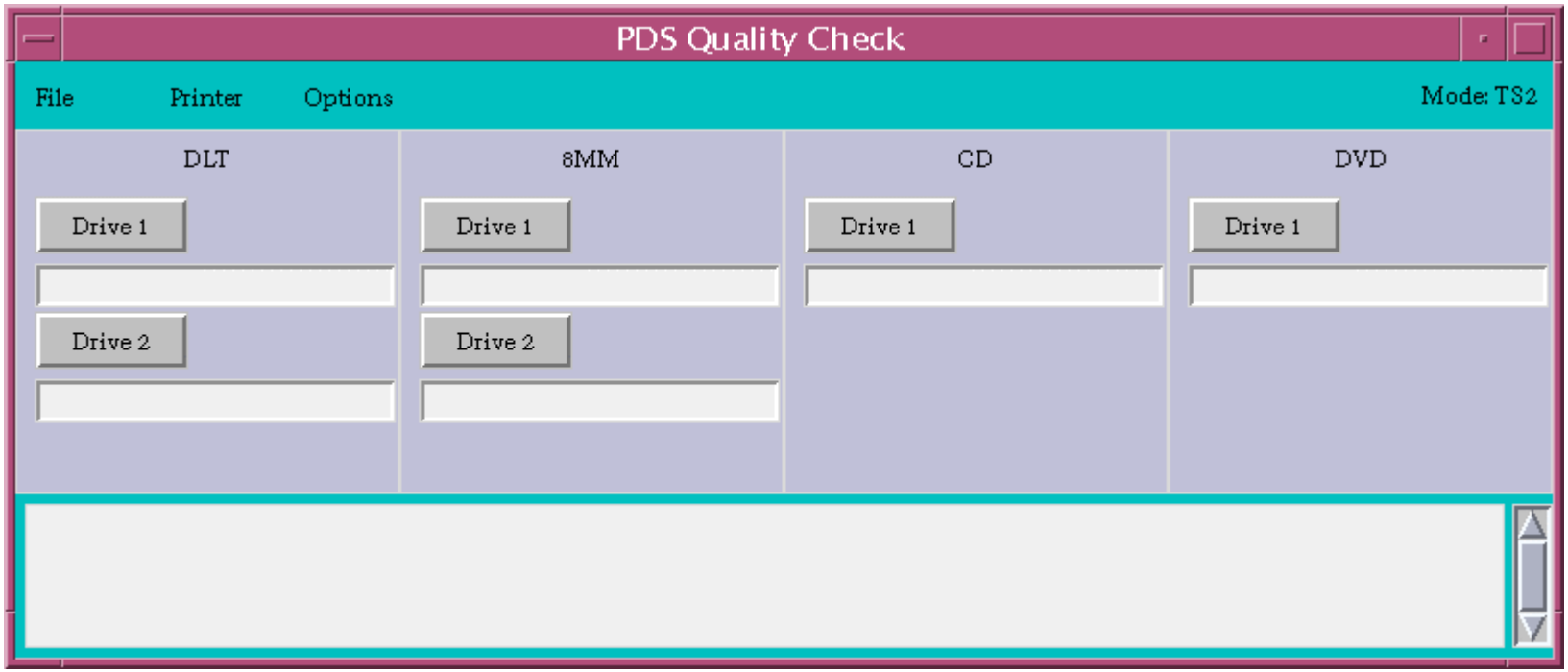
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **PDSSA Monitoring Activities (Cont.): Job Monitor Main Window (Cont.)**
  - **Rimage Pending Orders**
    - » **Displays how many orders are pending on the Rimage systems (how many CD images are waiting to be pulled over to the Rimage system; not the number of jobs that are actually active on the Rimage itself)**
    - » **Displays whether PDS's AutoRimage mode is enabled or disabled**
- **Monitoring/Controlling Product Processing Using PDS (Cont.): PDS Quality Check GUI**
  - **Drives available for or in use performing verification of disks and tapes**

Job Monitor Main Window



PDS Quality Check GUI



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Monitoring/Controlling Product Processing Using PDS: Procedure**
  - Set timer intervals (subordinate procedure) as necessary
  - Observe information displayed on the Main OI Screen
  - Specify job selection criteria (subordinate procedure) as necessary
  - Use the OI Detail Screen (subordinate procedure) as necessary
  - Observe information displayed on the Main OI Screen and Job Monitor Main Window
  - Perform subordinate procedures as necessary
  - Repeat preceding steps as necessary to monitor/control jobs

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Monitoring/Controlling Product Processing Using PDS: Subordinate Procedures**
  - **Setting Timer Intervals (to set the amount of time between refresh events for the OI Main Screen and/or the amount of time between episodes of processing the status files from the product generation code)**
  - **Specifying Job Selection Criteria (to specify the selection and sorting criteria for jobs to be displayed on the OI Main Screen)**
  - **Using the OI Detail Screen (to determine the status of units associated with a particular job or take action with respect to units associated with a particular job)**
  - **Activating a Job (to activate a job)**
  - **Stopping a Job Using the Main OI Screen Display (to suspend processing of a job)**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Monitoring/Controlling Product Processing Using PDS: Subordinate Procedures (Cont.)**
  - Terminating a Job Using the Job Monitor Main Window (to halt processing of a job, typically in preparation for returning it to a "Pending" status)
  - Responding to a Status of QC-Hold (Performing a QC Check or Verification) (to perform a QC check or media verification)
  - Completing a Job (to complete a job after a QC check)
  - Entering Notes about a Job (to enter comments or notes about a job)
  - Promoting a Job (to process a job ahead of other jobs)
  - Canceling a Job (not supported by the operator tools)
  - Generating PDS Production Reports (to generate PDS reports)

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Monitoring/Controlling Product Processing Using PDS: Subordinate Procedures (Cont.)**
  - **Selecting an Alternate Printer (to select an alternate printer for printing reports or jewel-case inserts)**
  - **Troubleshooting PDS Problems (to troubleshoot problems/failures affecting product processing)**

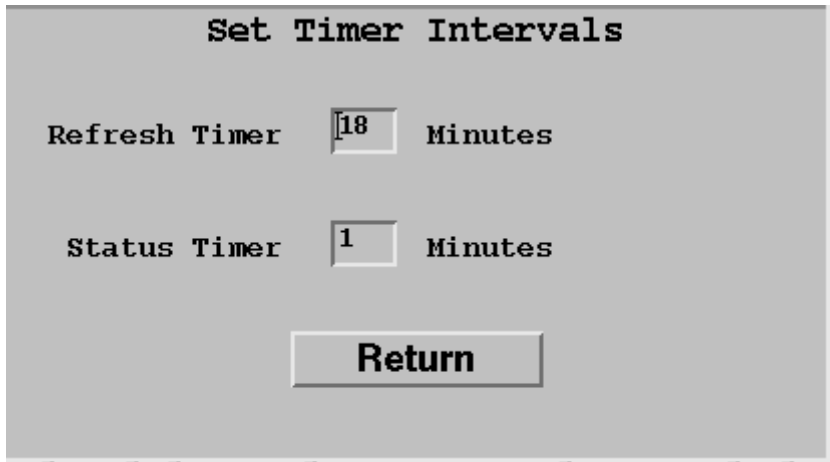
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Setting Timer Intervals**
  - **Two timers can be set:**
    - » **Refresh Timer [amount of time (in minutes) between refresh events for the OI Main Screen]**
    - » **Status Timer [amount of time (in minutes) between episodes of processing the status files from the product generation code]**
  - **Timer changes do not affect the default values for the timers**
  - **The changed values are in effect until they are changed again or a shutdown occurs**
  - **The default values in the database are used each time the OI is started up**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Setting Timer Intervals: Procedure**
  - Select Display → Timers from the pull-down menu on the Main OI Screen
  - To change the refresh timer setting type the desired value (in minutes) in the Refresh Timer field
  - To change the status timer setting type the desired value (in minutes) in the Status Timer field
  - Click on the Return button
  - Return to the procedure for Monitoring/Controlling Product Processing Using PDS

PDSOI: Set Timer Intervals Dialog Box



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Specifying Job Selection Criteria**
  - **Jobs to be displayed on the Main OI Screen can be selected and/or sorted using the PDSOI Selection Criteria Screen**
  - **Selection can be done on the basis of the following criteria, either individually or in combination:**
    - » **Priority**
    - » **Product Media [type]**
    - » **Due Date**
    - » **Product Code**

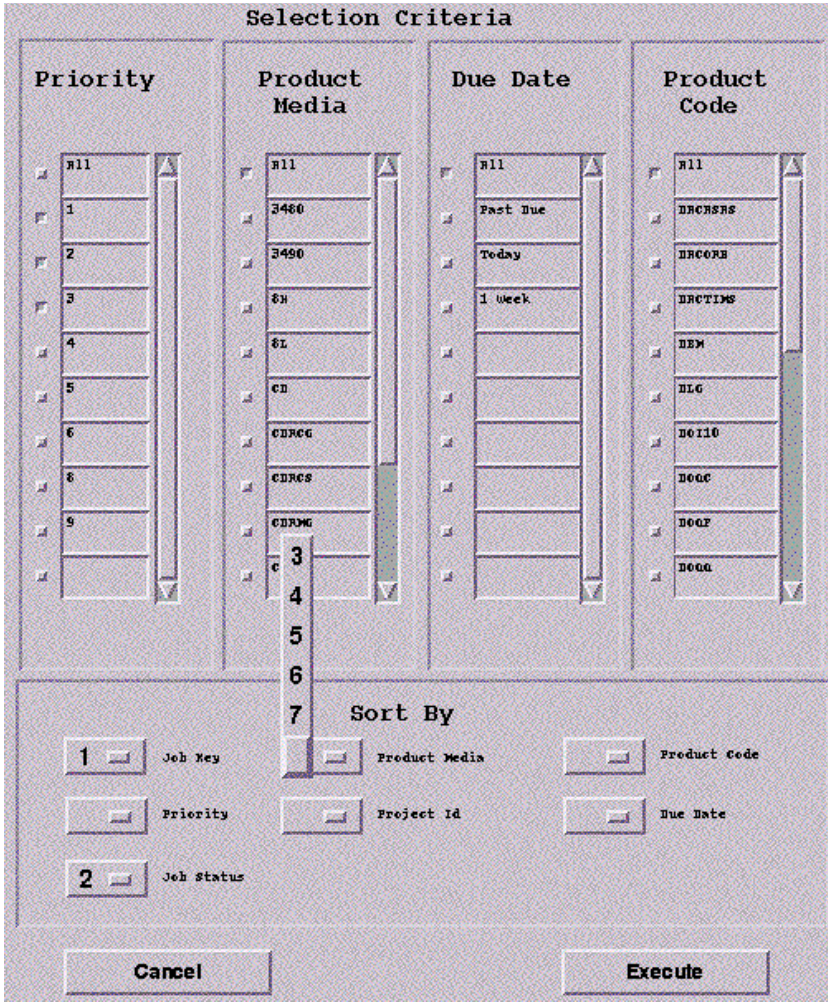
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Specifying Job Selection Criteria (Cont.)**
  - **Jobs can be sorted on the following fields, either individually or in combination:**
    - » **Job Key**
    - » **Priority**
    - » **Job Status**
    - » **Product Media**
    - » **Project Id**
    - » **Product Code**
    - » **Due Date**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Specifying Job Selection Criteria: Procedure**
  - Select Display → Data/Sort from the pull-down menu on the Main OI Screen
  - Choose selection criteria
  - Assign sorting order for sorting criteria
  - Click on the Execute button
  - Return to the procedure for Monitoring/Controlling Product Processing Using PDS

PDSOI: Selection Criteria Screen



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Using the OI Detail Screen**
  - **Provides a means of accomplishing the following objectives:**
    - » **Obtaining specific information with respect to units associated with a particular job**
    - » **Taking action with respect to units associated with a particular job**
  - **It is recommended that the operator not stay in the Detail window for long periods of time because the processing initiated by the Main screen timers will not occur while the Detail window is open**
  - **If the Detail window is left open for a long time, the amount of processing that might occur when the Detail window was closed could be extensive and might cause the Main screen to be inactive for quite a period of time**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Using the OI Detail Screen: Procedure**
  - Click on the action button at the beginning of the job line for the relevant job on the Main OI Screen
  - Select (highlight) Detail in the Action List box
  - Click on the OK button
  - Observe information displayed on the OI Detail Screen
  - Select a unit for the application of an action if necessary
  - To activate unit(s), click on the Activate button
  - To complete unit(s) [e.g., the unit(s) has (have) passed the QC check] click on the Complete button
  - To stop the job (that includes the units) select Stop Job from the pull-down menu
  - Repeat steps as necessary

PDSOI: Action List Box

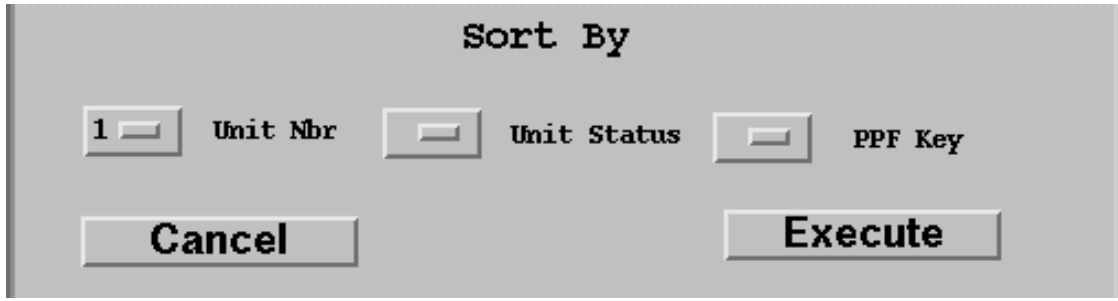
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Sorting Units**
  - **Units displayed on the OI Detail Screen can be sorted using the Sort Dialogue Box**
  - **Sorting can be done on the basis of the following criteria, either individually or in combination:**
    - » **Unit Nbr [number] (default sort preference that is used whenever the OI Detail Screen is opened)**
    - » **Unit Status**
    - » **PPF Key**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Sorting Units: Procedure**
  - **Select Display → Sort from the pull-down menu on the OI Detail Screen**
  - **Assign sorting order for sorting criteria**
  - **Click on the Execute button**
  - **Return to the procedure for Using the OI Detail Screen**

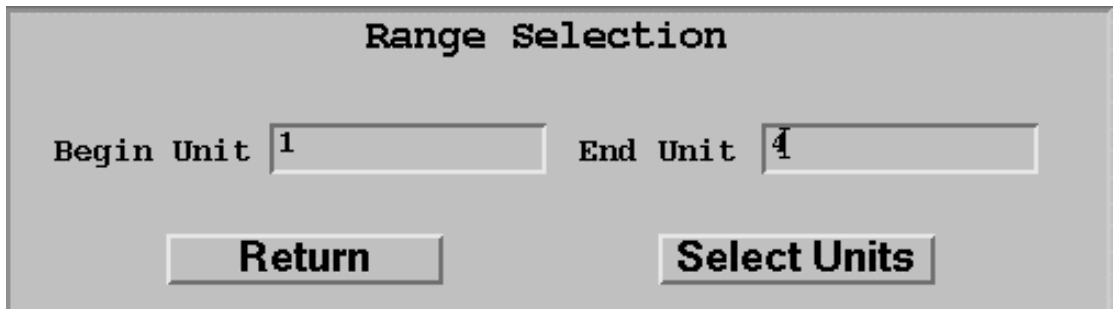
PDSOI: Sort Dialogue Box



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Selecting Multiple Units: Procedure**
  - Select Select → Range from the pull-down menu on the OI Detail Screen
  - Type the unit number of the first unit in the range of units to be selected in the Begin Unit field
  - Type the unit number of the last unit in the range of units to be selected in the End Unit field
  - Click on the Select Units button
  - Return to the procedure for Using the OI Detail Screen

PDSOI: Range Dialogue Box



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Activating a Job**
  - The Main OI Screen provides a means of activating jobs that are in a Pending status
  - The Activate option is available just once for each job
  - If it is necessary to reactivate the same job, the activation must be done at the detail level, which is accomplished using the OI Detail Screen
  - The Media Drive Selection window provides a means of designating the drive (i.e., tape drive or CD writer) to be used for a job
  - After the job has retrieved all data for the product the Media Drive Selection window is displayed until the Distribution Technician selects a device for writing the data

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Activating a Job (Cont.)**
  - **The Media Drive Selection window is not displayed for Rimage units if AutoRimage mode has been enabled**
    - » **AutoRimage may be enabled on systems that have multiple Rimage units only**
    - » **It should be disabled at sites that have a single Rimage unit**

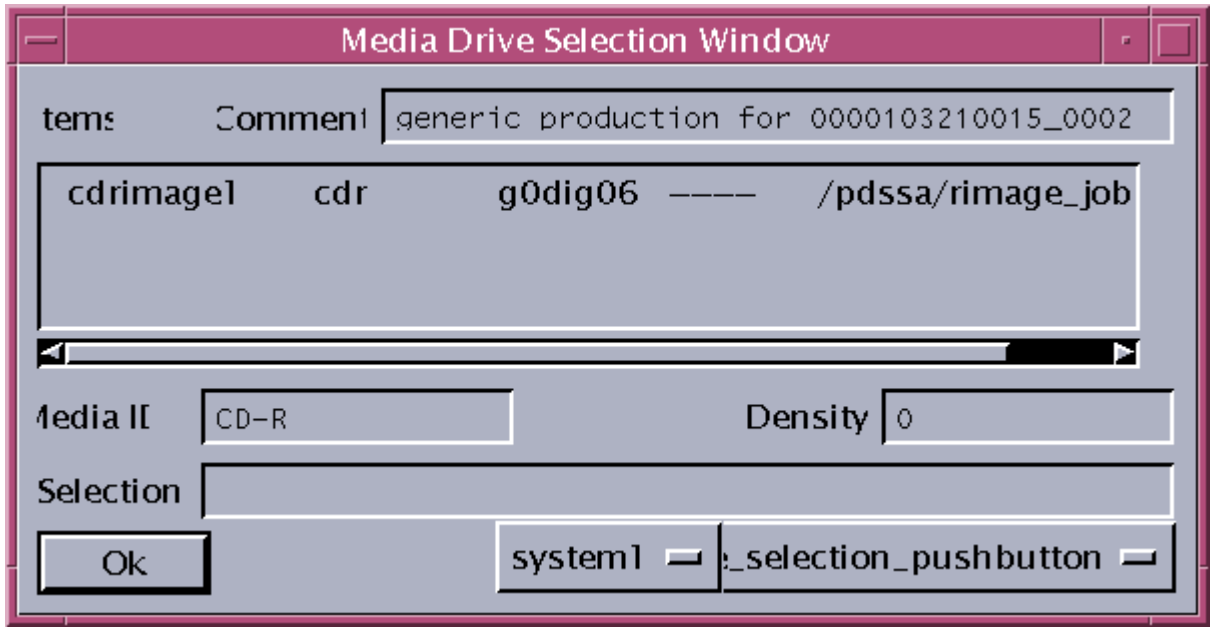
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Activating a Job: Procedure**
  - **If the job to be activated is a large job, determine whether all units for the order are included in the pending job displayed on the PDS Main OI Screen**
    - » **Refer to the procedure for Comparing the Number of Units in an Order and a Job**
  - **Click on the action button at the beginning of the job line for the relevant job (on the Main OI Screen)**
  - **Select (highlight) Activate in the Action List box**
  - **Click on the OK button**
  - **If the job is a CD or DVD job, ensure that the input bins of the Rimage unit contain blank disks**
  - **If the data are to be recorded on a tape, ensure that there is a blank tape in the drive (if applicable)**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Activating a Job: Procedure (Cont.)**
  - **If the data are to be recorded on a tape, wait for the drive to come on line**
  - **In the Media Drive Selection window click on (highlight) the drive (i.e., tape drive or CD writer) to be used for the job**
  - **Click on the OK button**
  - **Return to the procedure for Monitoring/Controlling Product Processing Using PDS**

Media Drive Selection Window



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job**
  - **The procedure may be performed as part of the procedure for Activating a Job**
  - **Purpose**
    - » **Determine whether all units for a large order are included in a pending job that is displayed on the PDS Main OI Screen**
    - » **Decide whether to activate the job or wait until the data for more or all units in the order become available**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job (Cont.)**
  - **Involves a comparison between the number of units in the order on the PDSIS OI Detail Screen and the number of units specified on the Main OI Screen**
    - » **If the number of units in the PDSIS order were greater than the number of units in the corresponding PDSSA job and the job was activated, only the units that were accessible to PDSSA would be copied to the specified medium**
    - » **Depending on the circumstances (including DAAC policy) activating part of an order may be acceptable**
    - » **However, for high-capacity media types such as DLT, activation of a partial job could be a very inefficient use of the media**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job (Cont.)**
  - **Discrepancies in the number of units in an order and the number of units in the corresponding job are generally due to PDSIS data "grouping" (also known as "chunking")**
  - **Possible grouping factors (only one is in effect at a time):**
    - » **Granule size**
    - » **Group limits**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job (Cont.)**
  - **Granule Size**
    - » **PDSIS makes a chunk of a large order available to PDSSA after a specified number of megabytes of data have been received from ECS**
    - » **Granule size limit is specified in the group_data_size column of the pdsis_serverconfig_tbl database table**
    - » **If the total size of an order is smaller than the granule size limit, granule-size grouping is irrelevant for that order**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job (Cont.)**
  - **Group Limits**
    - » **PDSIS makes a chunk of an order available to PDSSA when a specified number of units has been received from ECS**
    - » **The number of units is specified in the group_unit_size column of the pdsis_serverconfig_tbl database table**
    - » **If the value is NULL, all units are made available to PDSSA only after all unit data have been staged by ECS**
    - » **If the total number of units in an order is less than the group limit, group-limit grouping is irrelevant for that order**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job (Cont.)**
  - **The grouping factor in use is specified by the value in the grouping_config column of the pdsis_serverconfig_tbl database table**
  - **Valid grouping values for the pdsis_serverconfig_tbl are as follows:**
    - » **S = “granule size” grouping**
    - » **G = “group limits” grouping**
  - **To determine the current grouping factor use the procedure for Determining the Current Grouping Factor**
  - **The grouping factor is relevant for orders that are larger than the value assigned to the current grouping factor only**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job: Procedure**
  - **Activate the PDSIS OI Detail Screen for the order to be filled**
  - **Scroll to the bottom of the PDSIS OI Detail Screen to find the last unit in the order**
  - **Observe the number of units in the To_Do Units column for the corresponding job on the Main OI Screen**
  - **Compare the number of units in the order on the PDSIS OI Detail Screen with the number of units specified in the To_Do Units column for the corresponding job on the Main OI Screen**
  - **If all units currently available to PDSSA should be activated immediately, activate the job**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Comparing the Number of Units in an Order and a Job: Procedure (Cont.)**
  - **If some of the units currently available to PDSSA should be activated immediately, activate the applicable units**
  - **If none of the units currently available to PDSSA should be activated immediately, wait until the appropriate number of units is available to PDSSA before continuing**
  - **If it was necessary to wait until the appropriate number of units became available to PDSSA before continuing, repeat steps as necessary**

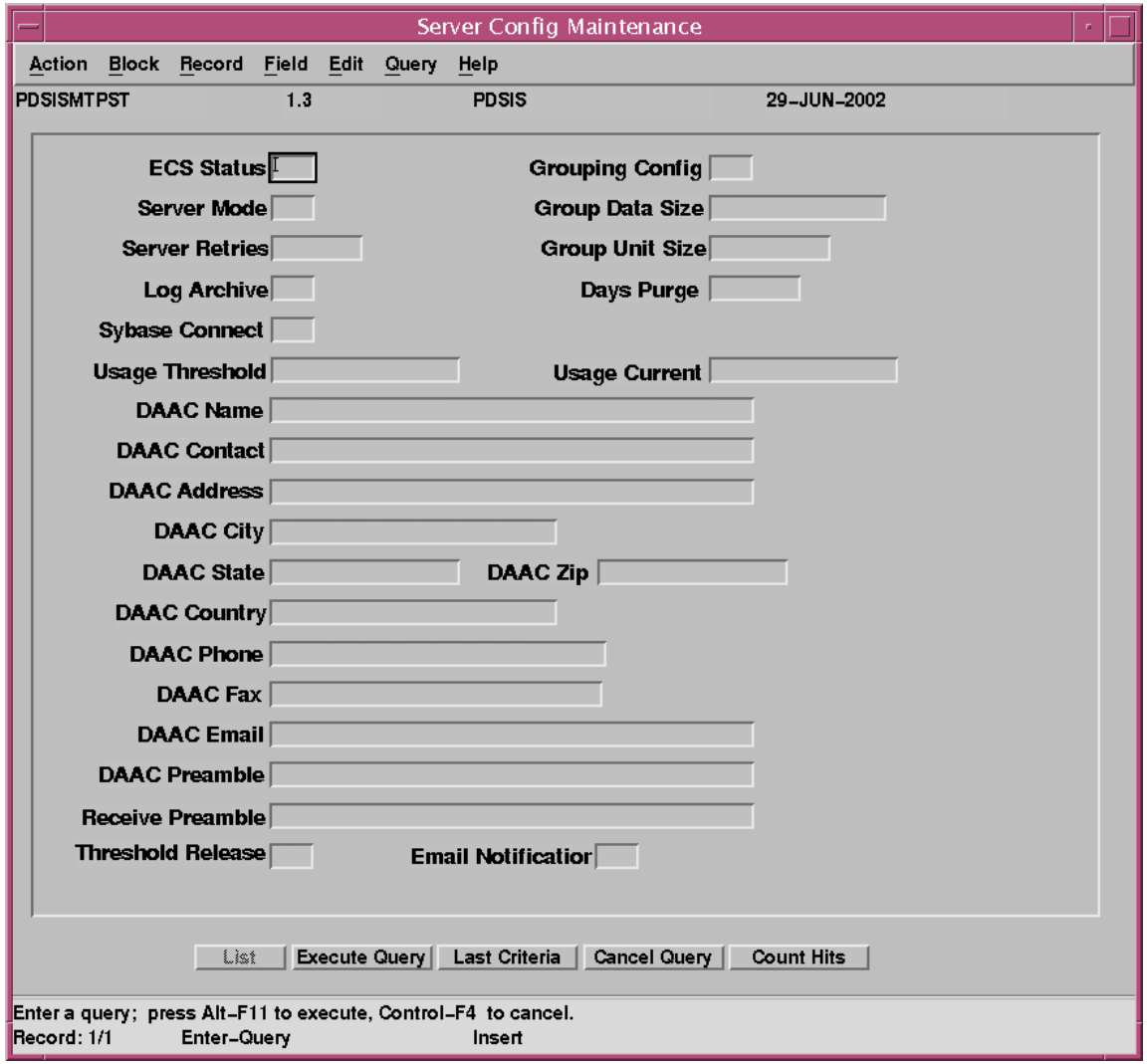
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Determining the Current Grouping Factor**
  - **It may be necessary to determine the current grouping factor when comparing the number of units in an order and a job**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Determining the Current Grouping Factor: Procedure**
  - **Start the PDSIS Maintenance Module**
  - **Click on the Server Config button**
  - **Click on the Execute Query button**
  - **Observe the value in the Grouping Config field of the Server Config Maintenance window**
    - **S = "granule size" grouping**
    - **G = "group limits" grouping**
  - **Observe the value in the Group Data Size field**
  - **Observe the value in the Group Unit Size field**
  - **Click on the Exit button**
  - **Click on the Exit button (PDSIS Maintenance Module Main Menu window)**

PDSIS Maintenance Module: Server Config Maintenance Window



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Stopping a Job Using the Main OI Screen Display**
  - **The procedure for Stopping a Job Using the Main OI Screen Display is performed as part of the procedure for Monitoring/Controlling Product Processing Using PDS**
  - **The Main OI Screen provides means of stopping (suspending) jobs**
  - **Note that if a job has proceeded to the stage where the data are being written to the specified medium that process (writing to the medium) continues even after an attempt to stop the job**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Stopping a Job Using the Main OI Screen Display: Procedure**
  - **Click on the action button at the beginning of the job line for the relevant job on the Main OI Screen**
  - **Select (highlight) Stop Job in the Action List box**
  - **Click on the OK button**
  - **Click on the Yes button in the confirmation dialogue box**
  - **Return to the procedure for Monitoring/Controlling Product Processing Using PDS**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Terminating a Job Using the Job Monitor Main Window**
  - **The procedure for Terminating a Job Using the Job Monitor Main Window is performed as part of the procedure for Monitoring/Controlling Product Processing Using PDS**
  - **The Job Monitor Main Window provides the Distribution Technician with means of terminating jobs**
  - **Note that if a job has proceeded to the stage where the data are being written to the specified medium that process (writing to the medium) continues even after an attempt to terminate the job**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Terminating a Job Using the Job Monitor Main Window: Procedure**
  - Place the mouse cursor on the relevant job (the one to be terminated) in the running job list of the Job Monitor Main Window and click and hold the right mouse button
  - Select Terminate Job from the pop-up menu
  - Click on the Proceed button in the confirmation window
  - Change the status of the job and its units to "Q" (Pending) in the PDSINFO Jobs Table and the PDSINFO Work Table
    - » Refer to the procedure for Changing the Values of Job Parameters Using the PDS Maintenance Module

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Responding to a Status of QC-Hold (Performing a QC Check or Verification)**
  - **A status of QC-Hold on the PDS Operator Interface (PDSOI) indicates that a job requires a QC check or media verification**
  - **The PDS Quality Check GUI provides a means of selecting a verification drive for checking a disk or tape**

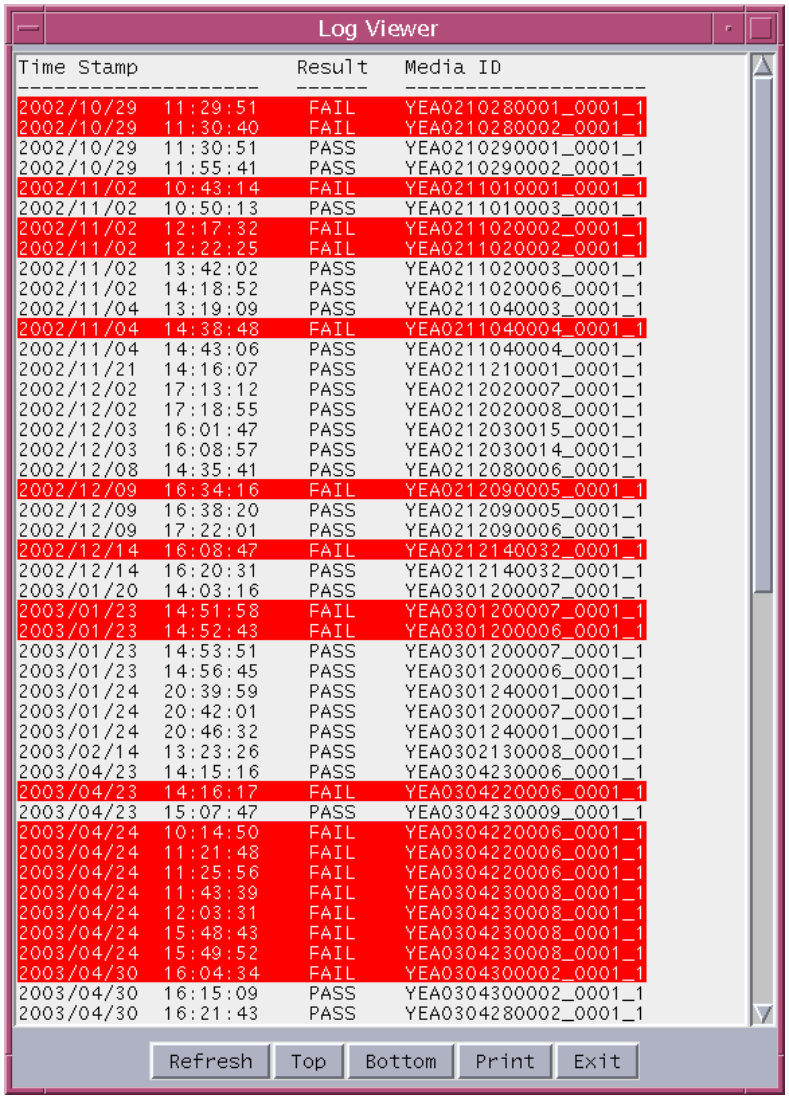
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Responding to a Status of QC-Hold (Performing a QC Check or Verification): Procedure**
  - **Retrieve the product summary from the printer**
  - **Review the product summary**
  - **Remove the medium (tape or disk) from the unit**
  - **Set the write-protect switch (tapes only)**
  - **Affix the tape label (tapes only)**
  - **Insert the jewel-case insert in a jewel case (disk only)**
  - **Identify an available drive using PDS Quality Check GUI**
  - **On the PDS Quality Check GUI enter the Media ID for the medium to be loaded in the drive**
  - **Load the medium (tape or disk) in an available drive**
  - **Wait for the drive to come on line before continuing**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Responding to a Status of QC-Hold (Performing a QC Check or Verification): Procedure (Cont.)**
  - On the PDS Quality Check GUI click on the button corresponding to the loaded drive
  - When verification is complete, remove the medium from the drive
  - Insert the medium in its case
  - Review the verification report for read errors
  - Gather the medium (in its case), product summary, and verification report
  - Perform the procedure for Completing a Job
  - Put the shipping label and packing list with the medium (in its case) in the appropriate area for pick-up by or delivery to the shipping function
  - Mark the job "Shipped" using the PDSIS OI

PDS Quality Check GUI Log Viewer



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Completing a Job**
  - **The Main OI Screen provides a means of completing jobs that are in a QC-Hold status once they have passed the QC check**
  - **The "Complete" action first checks the status of the units of the job**
    - » **If any unit(s) of the job is (are) not in QC-Hold status, some unit(s) may not be ready for completion**
    - » **Consequently, the completion must be performed using the OI Detail Screen as described in the procedure for Using the OI Detail Screen (preceding section of this lesson)**

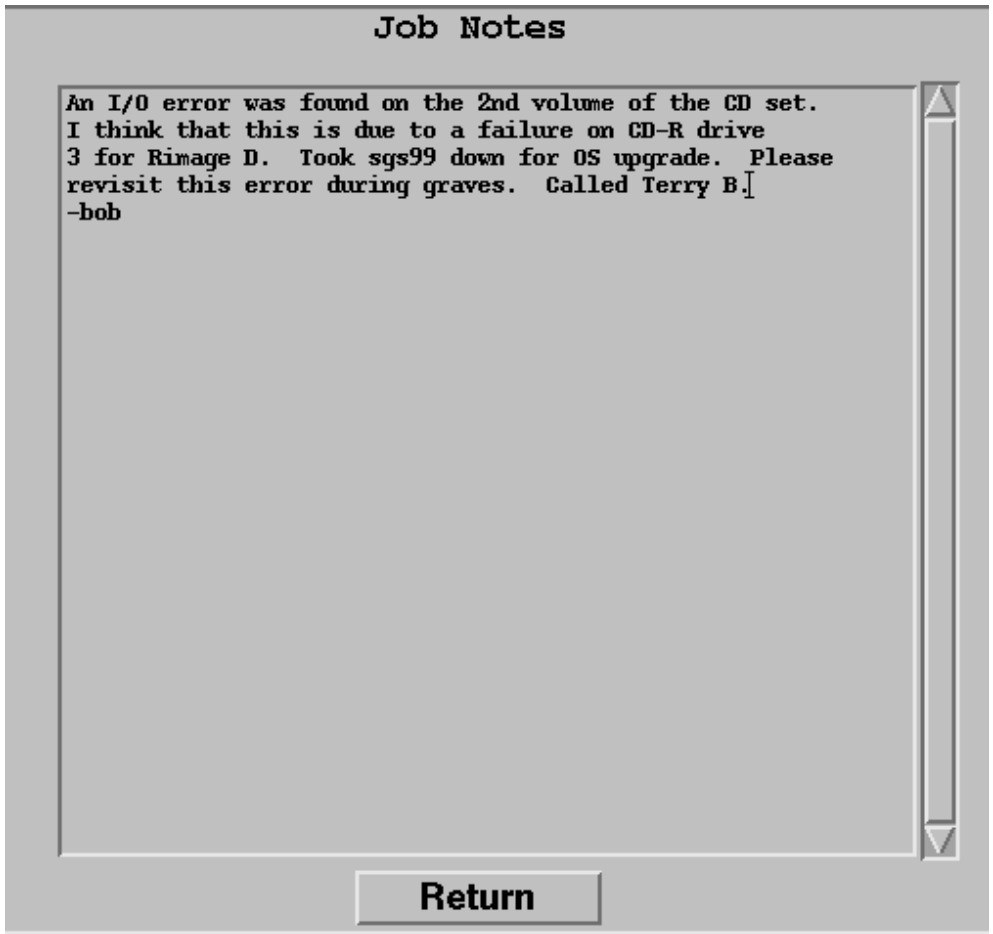
Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Completing a Job: Procedure**
  - **Click on the action button at the beginning of the job line for the relevant job on the Main OI Screen**
  - **Select (highlight) Complete in the Action List box**
  - **Click on the OK button**
  - **Return to the procedure for Monitoring/Controlling Product Processing Using PDS**

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Entering Notes about a Job**
  - The Main OI Screen provides a means of entering comments or notes about jobs
  - If a note has been entered for a job, an "*" is displayed in the Note field of the Main OI Screen
- **Procedure**
  - Click on the action button at the beginning of the job line for the relevant job on Main OI Screen
  - Select (highlight) Notes in the Action List box
  - Click on the OK button
  - Type appropriate text in the Job Notes dialogue box
  - Click on the Return button to dismiss the Job Notes dialogue box and return to the Main OI Screen
  - Return to the procedure for Monitoring/Controlling Product Processing Using PDS

PDSOI: Job Notes Dialogue Box



Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Promoting a Job**
  - A job would most likely be promoted at the request of User Services
  - The only practical means of promoting jobs is to activate the pending job ahead of any other pending jobs
- **Canceling a Job**
  - Jobs are not normally canceled using the PDSSA operator tools
  - Refer to the procedure for Rejecting a Unit/Order (subsequent section of this lesson)

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Generating PDS Production Reports: Procedure**
  - **For a report that contains the data currently being displayed Main OI Screen, select Reports → Queue from the pull-down menu on the Main OI Screen**
  - **For a report of all orders that still need to be produced (broken down by various time frame ranges), select Reports → Lag from the pull-down menu**
  - **For an error report concerning a particular job, first click in one of the fields on the job line for the relevant job**
  - **For an error report concerning a particular job, select Reports → Error from the pull-down menu**

PDS Queue Report

Job Key	Total Units	Pri	Product Media	Project Id	Due Date	Copy Flag	Product Code	Status
0000308080004_0001	1	9	DVD	Pds Project	11-AUG-03		L0OUT	Pending
1110308080003_0001	1	9	CD	Pds Project	11-AUG-03		ASTEROUT	Pending
1110308080005_0001	1	9	8H	Pds Project	11-AUG-03		ASTEROUT	Pending
1110308110003_0001	1	9	CD	Pds Project	14-AUG-03		ASTEROUT	Pending
YEA0308080006_0001	1	9	D7	Pds Project	11-AUG-03		GENERIC2	Pending

PDS Lagging Order Report

Date: 09/27/2003 Report No. : PDSSAL
Time: 02:35:00 PM LAGGING ORDER REPORT Page: 1

Order Nbr	Date Entered	Date Due	Total Units	Prod Code	Product Format
30 days old					
20 days old					
10 days old					
1110309170104	09/17/2003	09/20/2003	1	E200	ASTEROUT
1110309170108	09/17/2003	09/20/2003	1	E200	ASTEROUT
1110309170111	09/17/2003	09/20/2003	1	E200	ASTEROUT
1110309170115	09/17/2003	09/20/2003	1	E200	ASTEROUT
1110309170117	09/17/2003	09/20/2003	1	E200	ASTEROUT

PDS Error Report

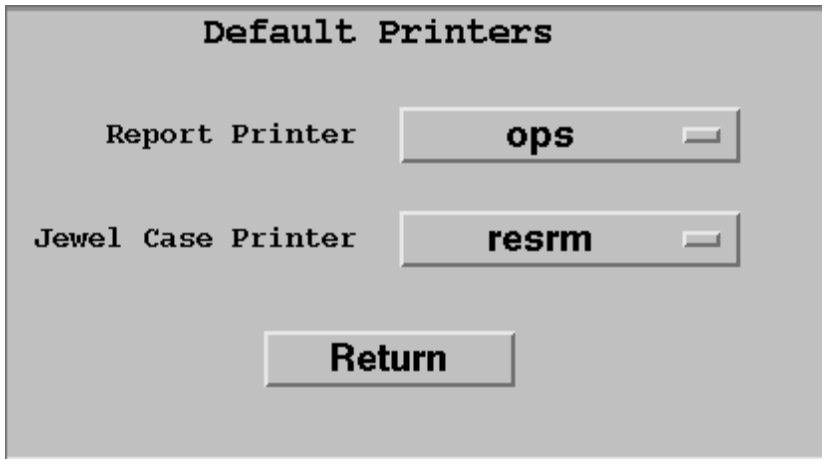
Error report for YEA0309170681_0001

[genericout-nodir] Error: Unit # 1, DPATH = /pdsis/pdsis/staging/orders/YEA0309170681_0001/2
[genericout-notdir] Error: Unit # 1, DPATH = /pdsis/pdsis/staging/orders/YEA0309170681_0001/
[genericout-nofile] Error: There is an error with unit # 1. This unit will not be on t
[genericout-getgeneric] Error: unable to retrieve generic files from /pdsis/pdsis/stagi
[genericout-dpath] Error: Unit 1 will be placed into error

Monitoring/Controlling Product Processing Using PDS (Cont.)

- **Selecting an Alternate Printer: Procedure**
  - Click on Printers on the menu bar of the Main OI Screen
  - Select the desired printer from the applicable option button (either Report Printer or Jewel-Case Insert Printer)
  - If an alternate printer is to be designated for the other type of printer, repeat the preceding step for the other printer
  - Click on the Return button
  - Return to the procedure for Generating PDS Production Reports or the procedure for Monitoring/Controlling Product Processing Using PDS (as applicable)

PDSOI: Default Printers



Monitoring/Controlling Order Processing Using the PDSIS OI

- **PDSIS Monitoring Activities**
  - **Monitoring/controlling order processing using the PDSIS OI involves the following activities (among others):**
    - » **Determining the Status of an Order**
    - » **Determining the Status of Units Associated with an Order**
    - » **Marking a Job Shipped**
    - » **Rejecting a Unit/Order**
    - » **Generating PDSIS reports**

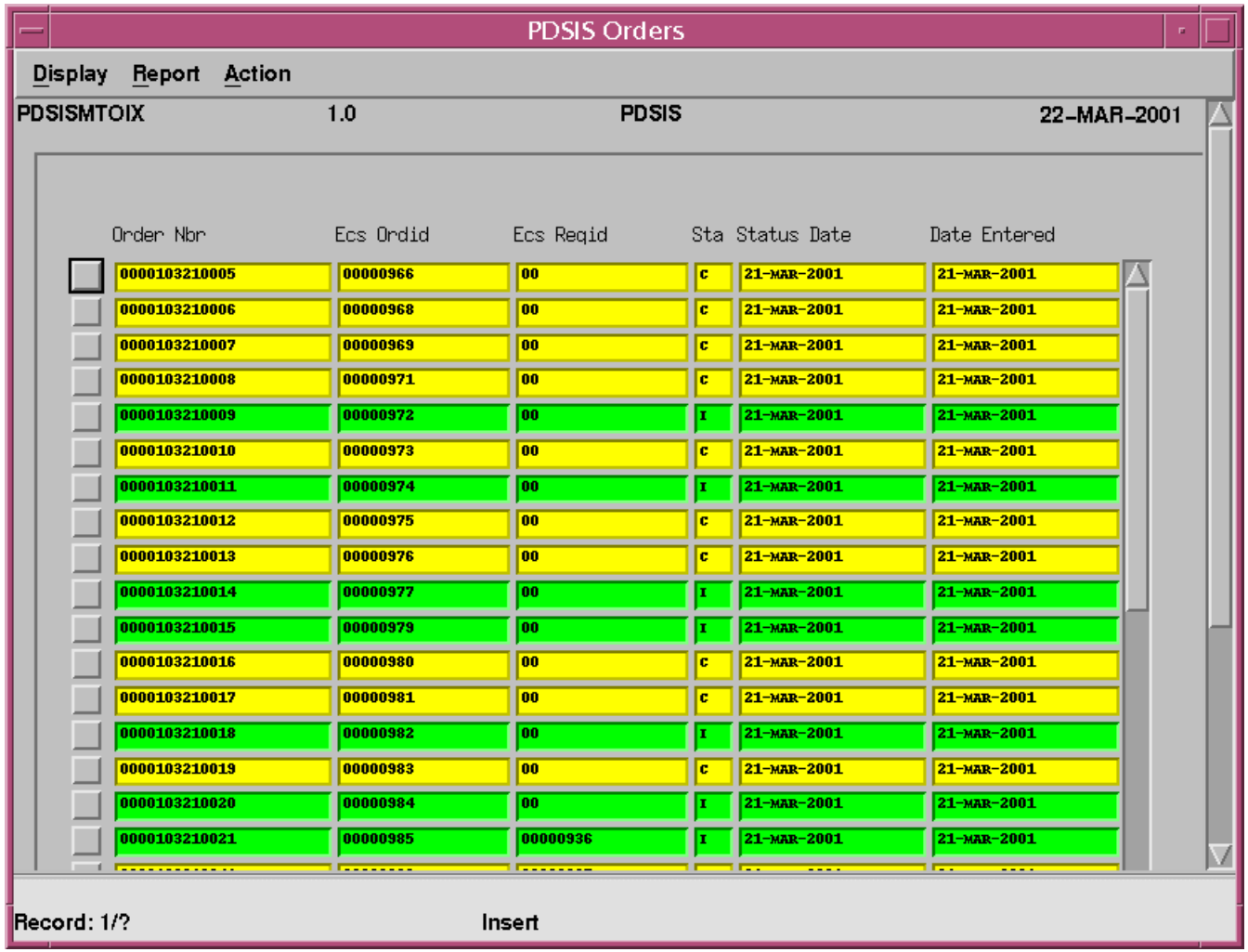
Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Main Screen**
  - **Action Button [not labeled]**
    - » **Allows access to a list of actions that can be taken with respect to the order**
  - **Order Nbr**
    - » **Unique PDS order number given to the customer request**
    - » **The software creates an order number each time the ECS VOGW sends an order**
  - **Ecs Ordid**
    - » **ECS order number for the customer request in the MSS database**

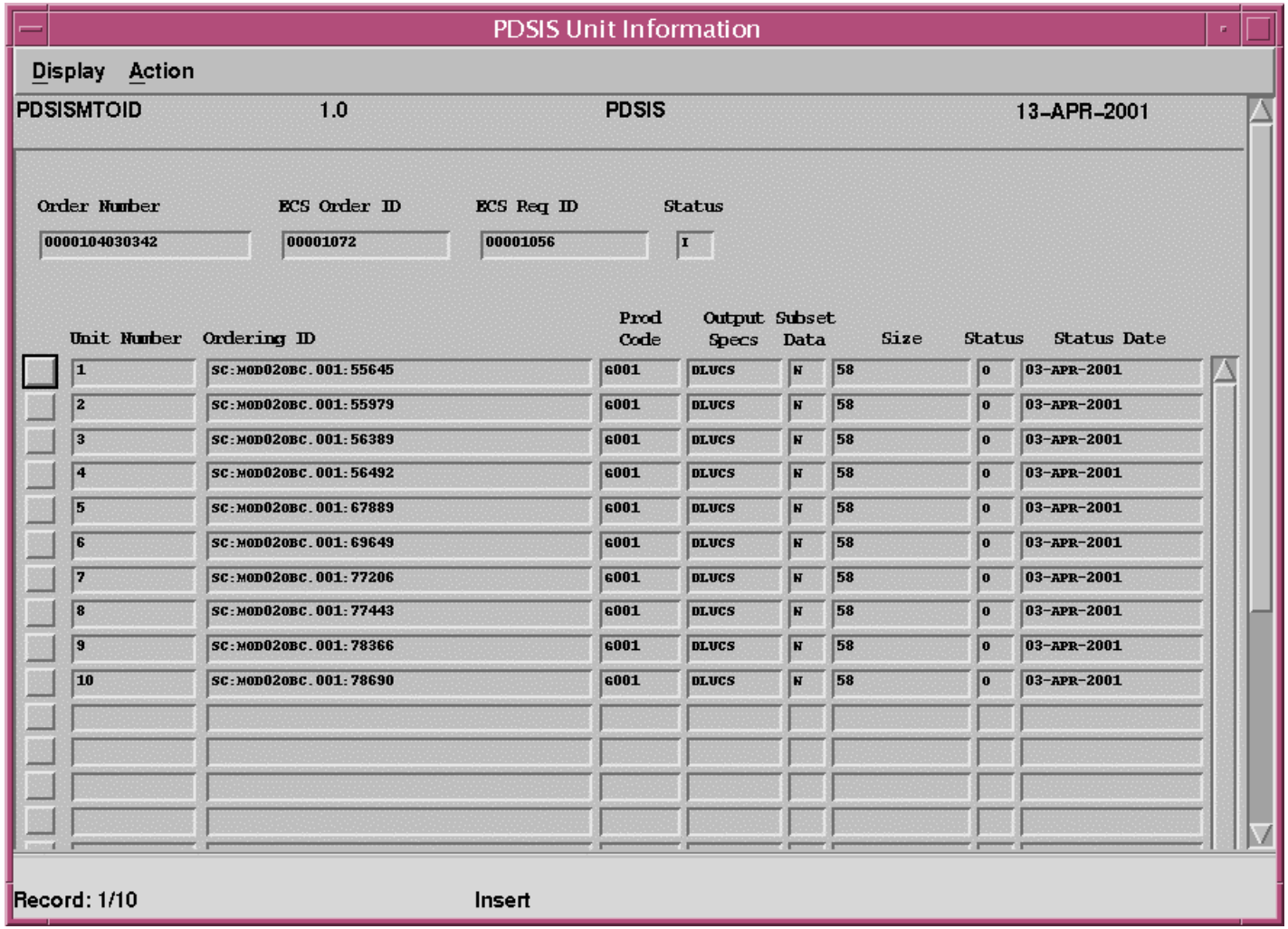
Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Main Screen**
  - **Ecs Reqid**
    - » **ECS Request ID number for the customer request in the MSS database**
  - **Sta**
    - » **PDSIS status of the order**
  - **Status Date**
    - » **Last date any database status has changed on the order**
  - **Date Entered**
    - » **Date when the order was entered in the system**

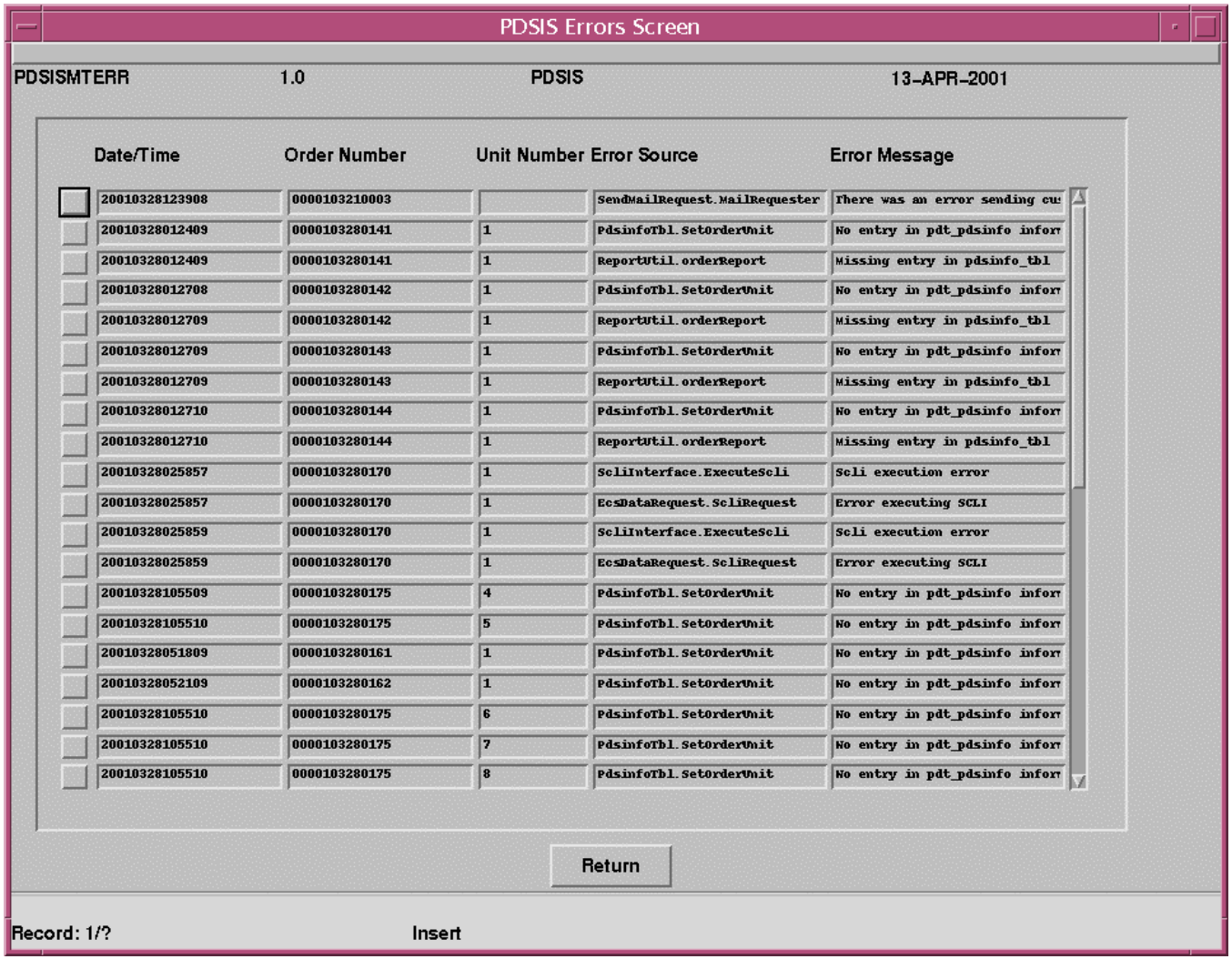
PDSIS OI Main Screen



PDSIS OI Detail Screen



PDSIS OI Error Screen



Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Detail Screen (for the selected individual PDS order)**
  - **Order Number**
    - » **Unique PDS order number given to the customer request**
  - **ECS Order ID**
    - » **ECS order number of the customer request in the MSS database**
  - **ECS Req ID**
    - » **ECS Request ID number of the customer request in the MSS database**
  - **Status**
    - » **PDSIS status of the order**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Detail Screen (for each unit within the selected PDS order)**
  - **Action Button [not labeled]**
    - » **Allows access to a list of actions that can be taken with respect to the job**
  - **Unit Number**
    - » **Unit number**
  - **Ordering ID**
    - » **Unique reference for the relevant granule in the ECS archive**
  - **Prod Code**
    - » **PDSIS's description of the product code**
    - » **It is loaded from customizable tables**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Detail Screen (for each unit within the selected PDS order) (Cont.)**
  - **Output Specs**
    - » **PDSSA's description of the output specifications selected by the customer**
  - **Subset Data**
    - » **Yes/No flag indicating whether the unit is a subsetted request (L7 floating scene)**
  - **Size**
    - » **Size in MB of the granule**
    - » **May be an estimate in some cases**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Detail Screen (for each unit within the selected PDS order) (Cont.)**
  - **Status**
    - » **PDSIS status of the order**
  - **Status Date**
    - » **Last date any database status has changed on the unit**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Error Screen**
  - **Action Button [not labeled]**
    - » **Allows access to a list of actions that can be taken with respect to the item**
  - **Date/Time**
    - » **Time when the error occurred**
  - **Order Number**
    - » **Order number of the order in which the error occurred**
  - **Unit Number**
    - » **PDS unit number in which the error occurred**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **PDSIS Monitoring Activities (Cont.): PDSIS OI Error Screen (Cont.)**
  - **Error Source**
    - » **Source of the error**
  - **Error Message**
    - » **PDSIS coded error message**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Monitoring/Controlling Order Processing Using the PDSIS OI: Procedure**
  - **Observe information displayed on the PDSIS OI Main Screen**
  - **Use the PDSIS OI Detail Screen (subordinate procedure) as necessary**
  - **Perform subordinate procedures as necessary**
    - » **Using the PDSIS OI Detail Screen (to determine the status of units or take action with respect to units)**
    - » **Marking a Job Shipped (to mark a completed job shipped)**
    - » **Rejecting a Unit/Order (to change the status of a unit or order to "X" ("Reject")**
    - » **Generating PDSIS Reports (to generate PDSIS error, lagging order, rejected order, or shipped order reports)**
    - » **Troubleshooting PDS Problems (to troubleshoot problems/failures affecting order processing)**
  - **Repeat preceding steps as necessary**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Monitoring/Controlling Order Processing Using the PDSIS OI: Subordinate Procedures**
  - **Using the PDSIS OI Detail Screen (to determine the status of units associated with a particular order or take action with respect to units associated with a particular order)**
  - **Marking a Job Shipped (to mark a completed job shipped)**
  - **Rejecting a Unit/Order (to change the status of a unit or order to "X" ("Reject"), effectively canceling the unit or order)**
  - **Generating PDSIS Reports (to generate PDSIS error, lagging order, rejected order, or shipped order reports)**
  - **Troubleshooting PDS Problems (to troubleshoot problems/failures affecting order processing)**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Using the PDSIS OI Detail Screen**
  - **Provides a means of accomplishing the following objectives:**
    - » **Obtaining specific information with respect to units associated with a particular order**
    - » **Taking action with respect to units associated with a particular order**

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Using the PDSIS OI Detail Screen: Procedure**
  - Click on the action button at the beginning of the job line for the relevant job on the Main OI Screen
  - Select (highlight) Details in the Action List box
  - Click on the OK button
  - Observe information displayed on the PDSIS OI Detail Screen
  - If it is desirable to see the error(s) associated with a particular unit, perform the procedure for Checking/Clearing Errors on PDSIS (subsequent section of this lesson)
  - If it becomes necessary to reject unit(s), perform the procedure for Rejecting a Unit/Order (subsequent section of this lesson)
  - Repeat steps as necessary to obtain additional information and/or take action with respect to units associated with the order

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Marking a Job Shipped**
  - The PDSIS OI Main Screen provides a means of marking a completed job shipped
- **Marking a Job Shipped: Procedure**
  - Verify that the following conditions have been met:
    - » The Sta [status] of the job (as displayed on the PDSIS OI Main Screen) is C (completed)
    - » The packing lists for the job have been printed
    - » The shipping labels for the job have been printed
  - Click on the action button at the beginning of the relevant order status line
  - Select (highlight) Ship in the Action List box
  - Click on the OK button

Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Rejecting a Unit/Order**
  - **Both the PDSIS OI Main Screen and the PDSIS OI Detail Screen provide means of rejecting a unit/order**

CAUTION

Before rejecting a unit or order it is advisable to have in hand written authorization to do so.

Selecting "Reject" changes the status of the unit or order to a Reject (X) or cancelled state. Care is recommended because the reject function does not have a confirmation button. All units in process will be marked for rejection and no further processing will occur. The customer's completion report will reflect the specified unit as having a Reject status.

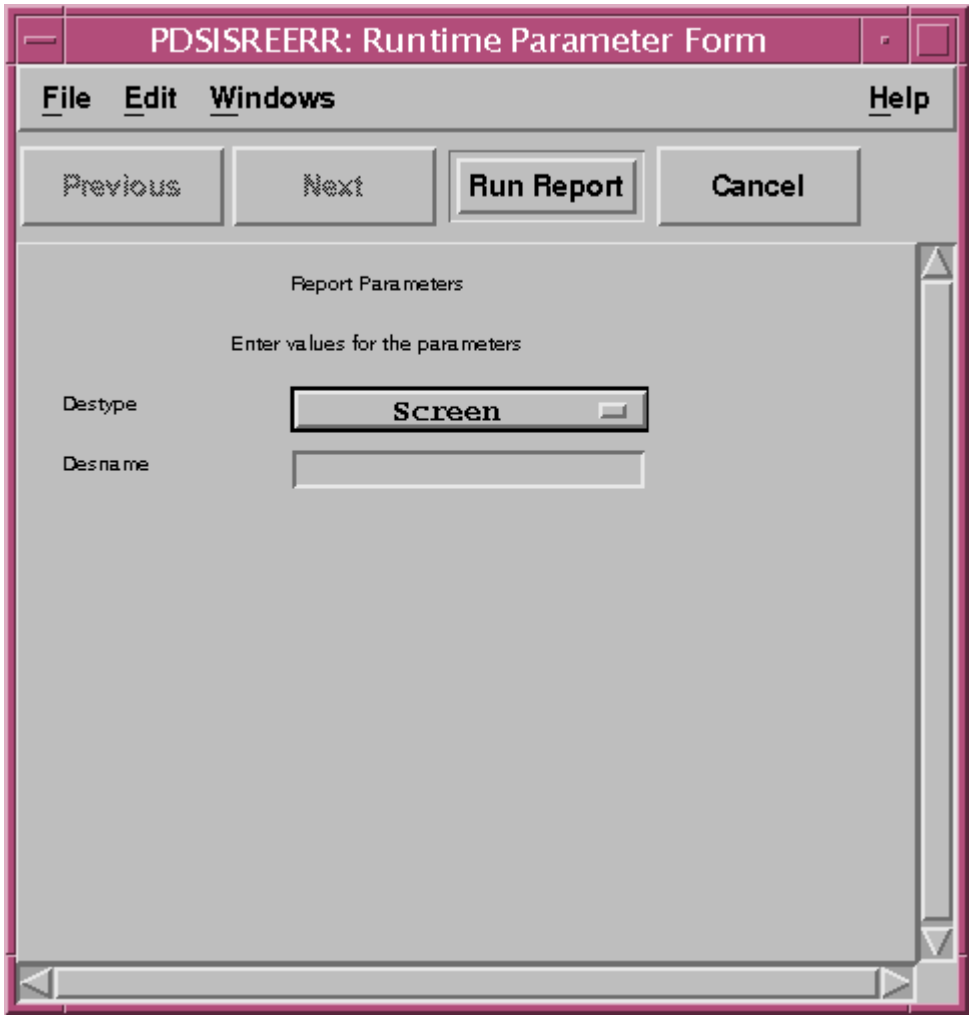
Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Rejecting a Unit/Order: Procedure**
  - Click on the action button at the beginning of the relevant order status line or unit line
  - Select (highlight) Reject in the Action List box
  - Click on the OK button
  - Return to the procedure being performed before the action button was selected; either...
    - » Monitoring/Controlling Order Processing Using the PDSIS OI or
    - » Using the PDSIS OI Detail Screen

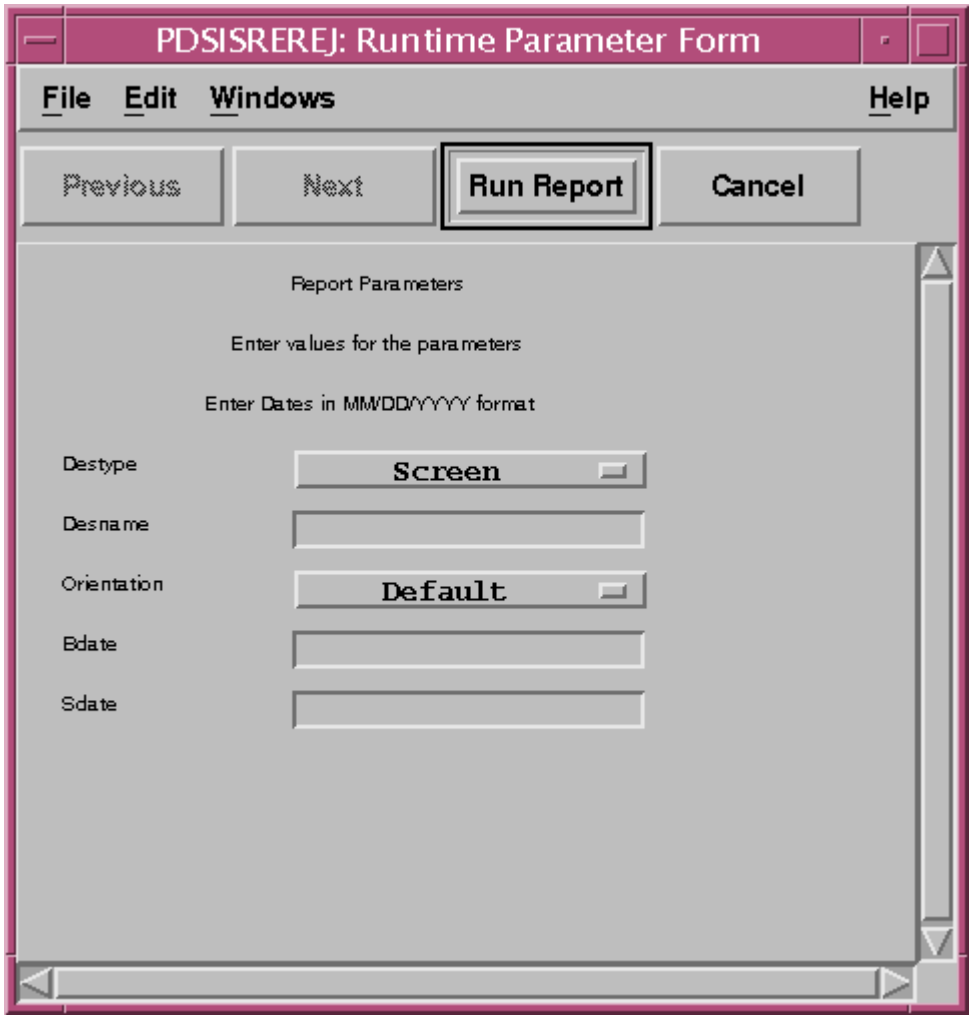
Monitoring/Controlling Order Processing Using PDSIS OI (Cont.)

- **Generating PDSIS Reports: Procedure**
  - Select the type of report from the Reports pull-down menu on the PDSIS OI Main Screen
    - » Error Report
    - » Orders Lagged
    - » Orders Rejected
    - » Orders Shipped
  - Select the destination type
    - » Screen
    - » File
    - » Printer
    - » Mail
    - » Preview
  - Specify destination/orientation/date range if necessary
  - Click on the Run Report button
  - Review the report

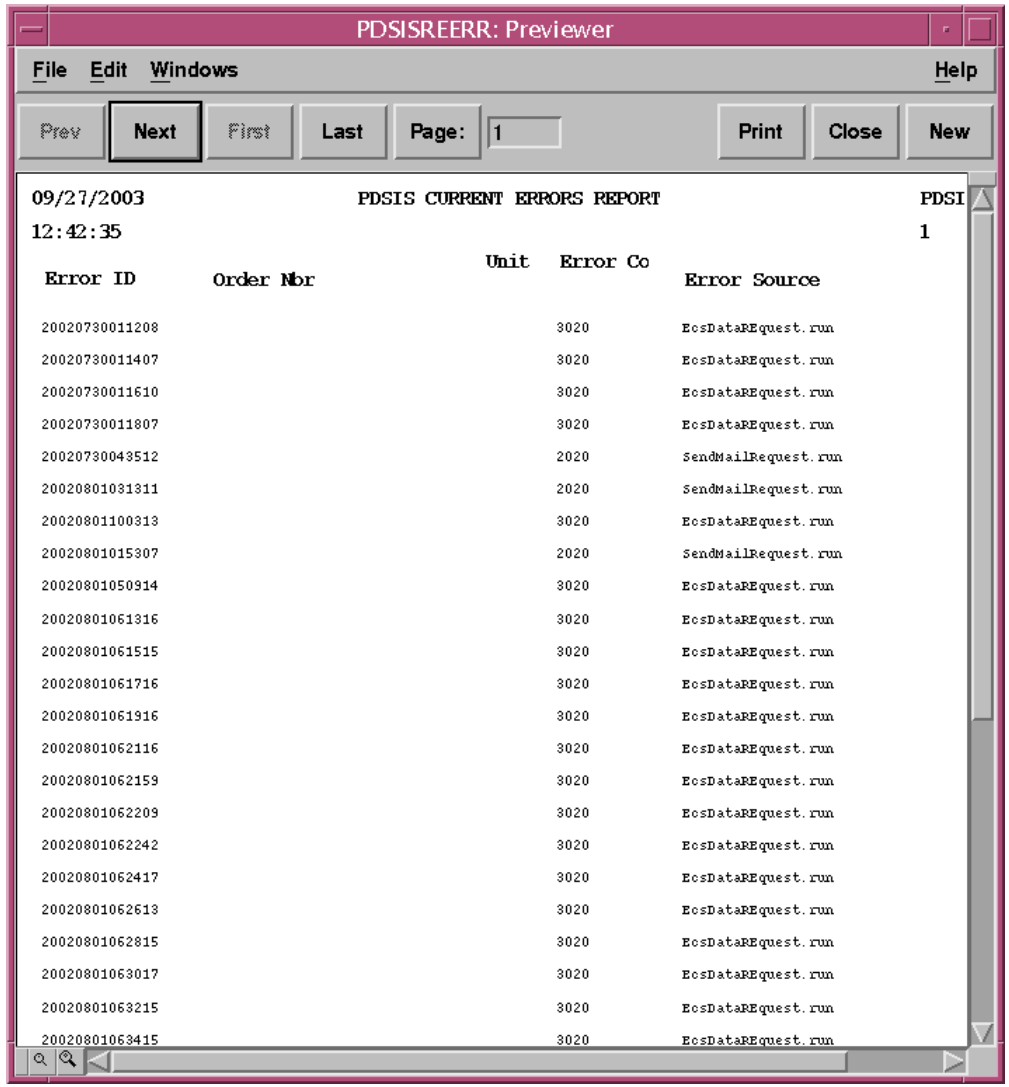
Report Parameters Form



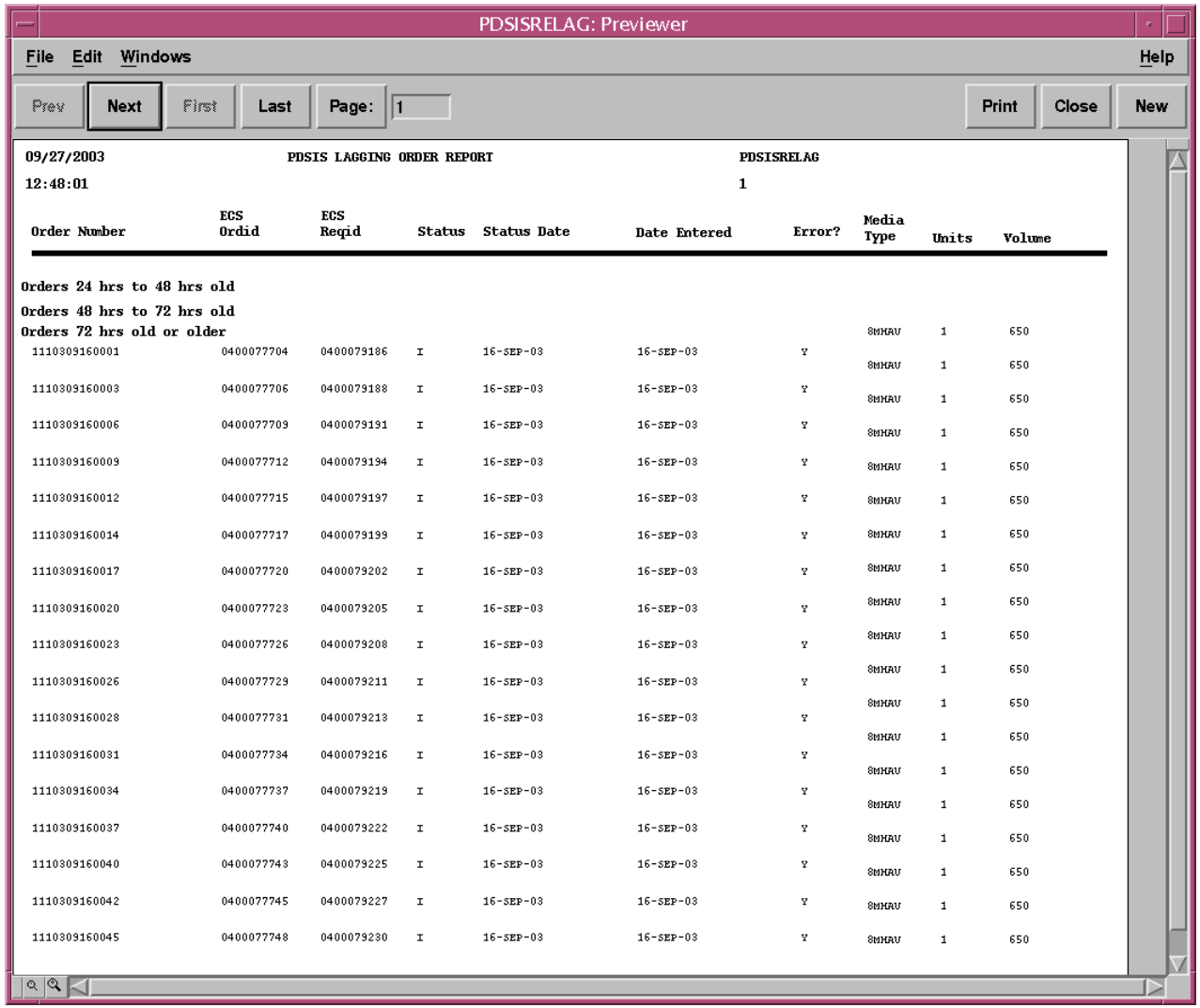
Report Parameters Form (Alternate Form)



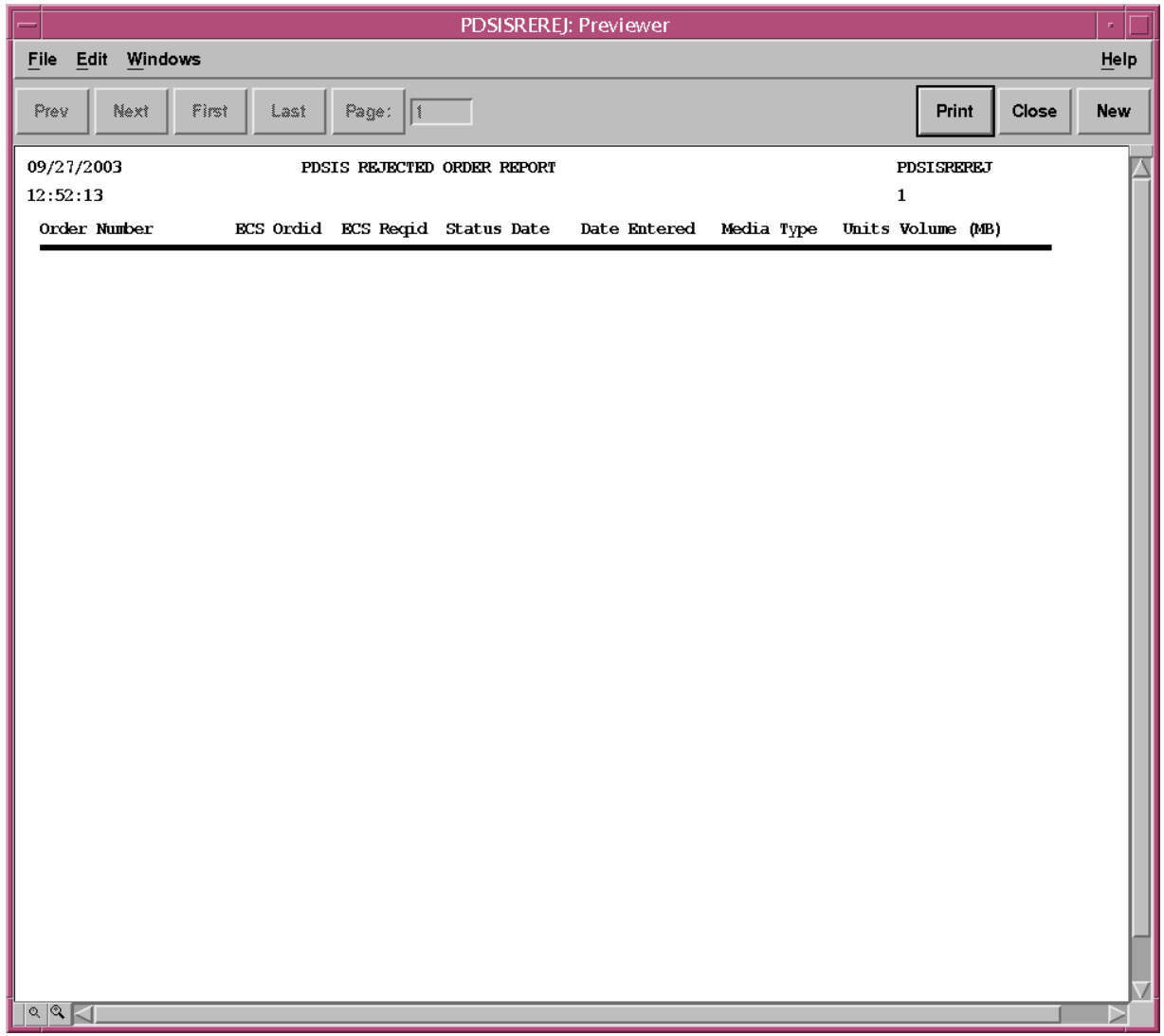
PDSIS Current Errors Report



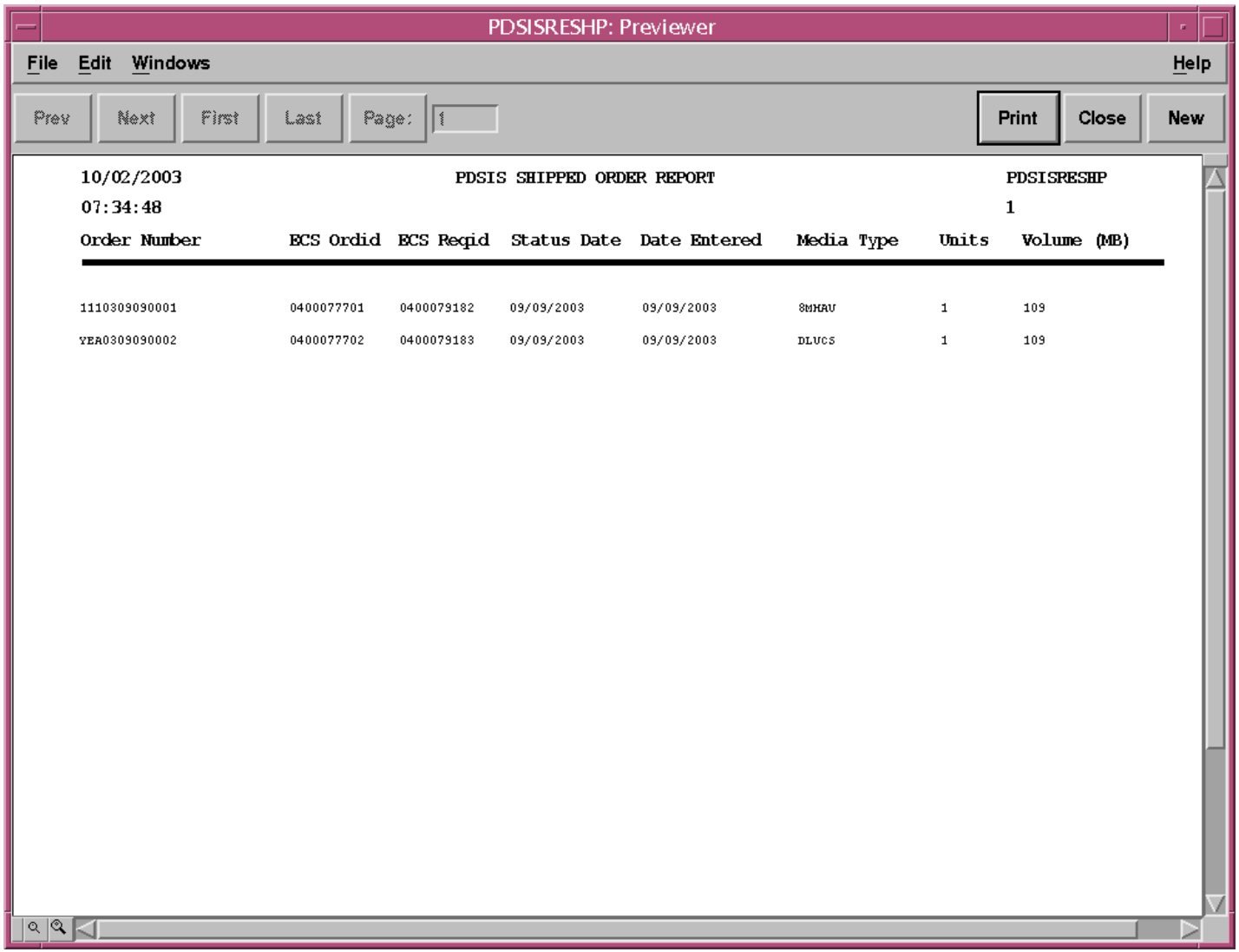
PDSIS Lagging Order Report



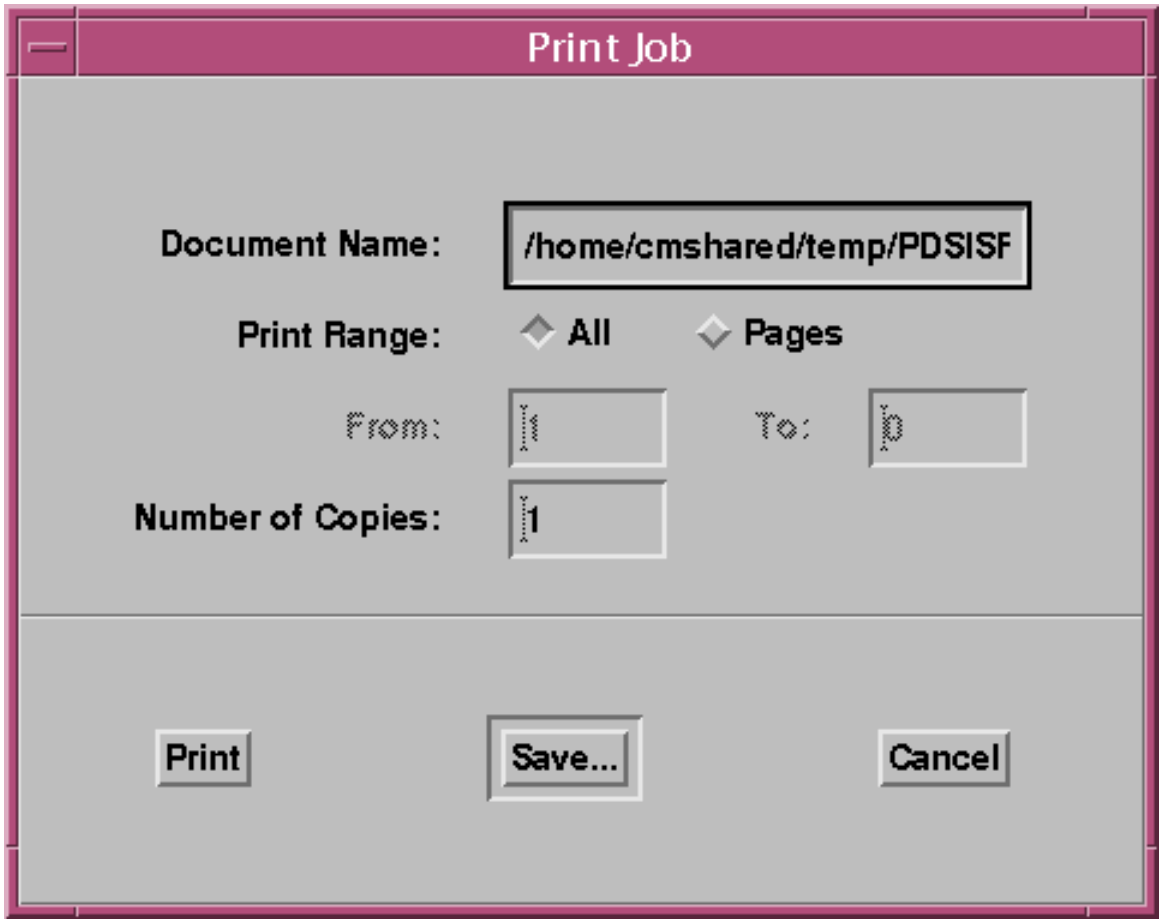
PDSIS Rejected Orders Report



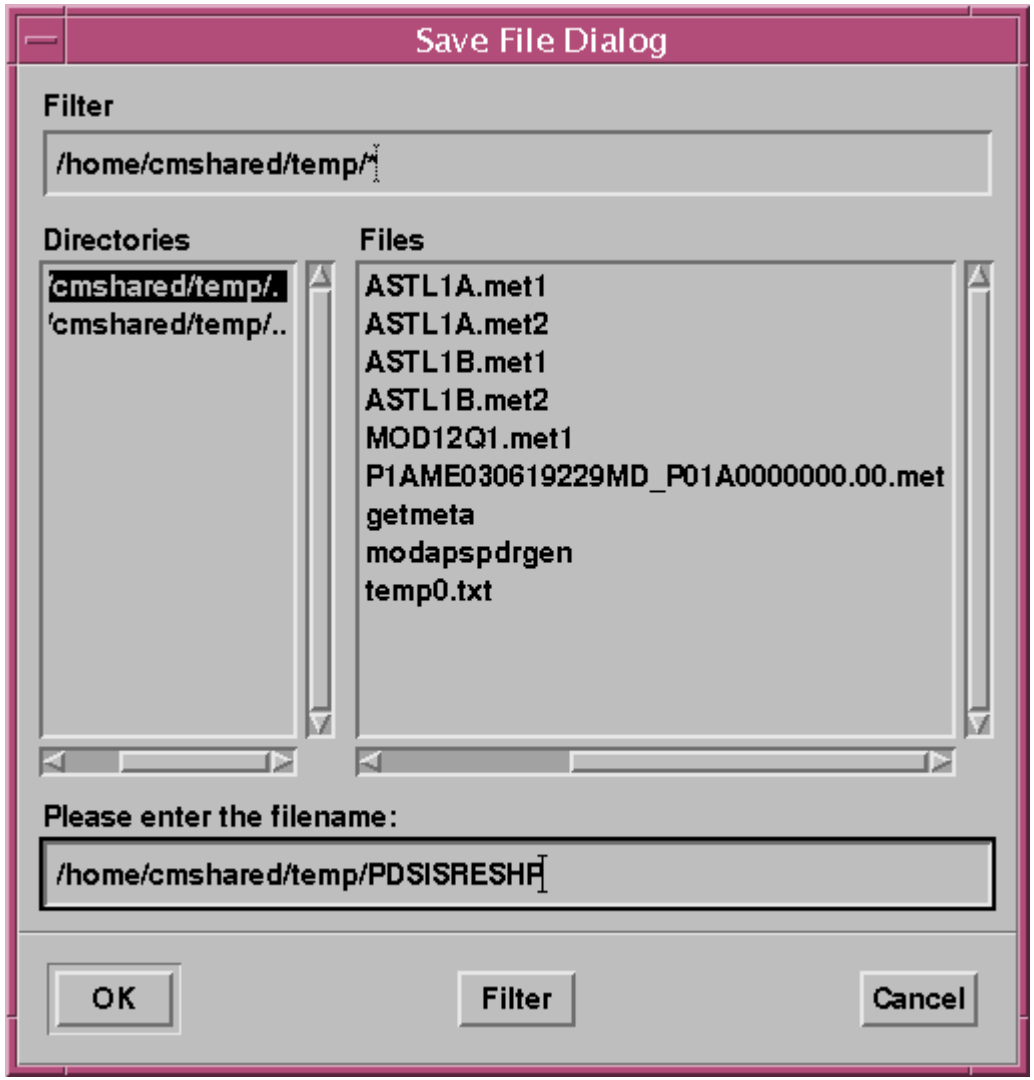
PDSIS Shipped Order Report



Print Job Dialogue Box



Save File Dialog Box



Using the PDS and PDSIS Cleanup Managers

- **Using the PDS Cleanup Manager**
  - **GUI used for specifying a file cleanup strategy for the following types of PDSSA files:**
    - **Summary files**
    - **Master list files**
    - **Log files**
    - **Operator Interface log files**
    - **Status files**
    - **Jewel-case insert files**
    - **Label files**
    - **Text files**
    - **TIFF (Tag Image File Format) files**
  - **The PDSIS Cleanup Manager is used for specifying a file cleanup strategy for PDSIS files**

Using the PDS and PDSIS Cleanup Managers (Cont.)

- PDS Cleanup Manager (Cont.)
  - Generates or modifies a Bourne shell script (i.e., cleanup.sh) that implements the file cleanup strategy
    - » In addition, the PDS Cleanup Manager may modify the crontab file to adjust the time intervals for deletion or archiving of files
  - The large number of files generated by PDSSA activities would overwhelm the system if some of the files were not removed from the working directories on a fairly frequent basis
    - » However, some files may be required for a limited period of time in order to troubleshoot a job if there is a problem with it or if it is returned from the customer
  - PDS Cleanup Manager is not used very often, especially if a manageable retention period has been established for PDSSA files

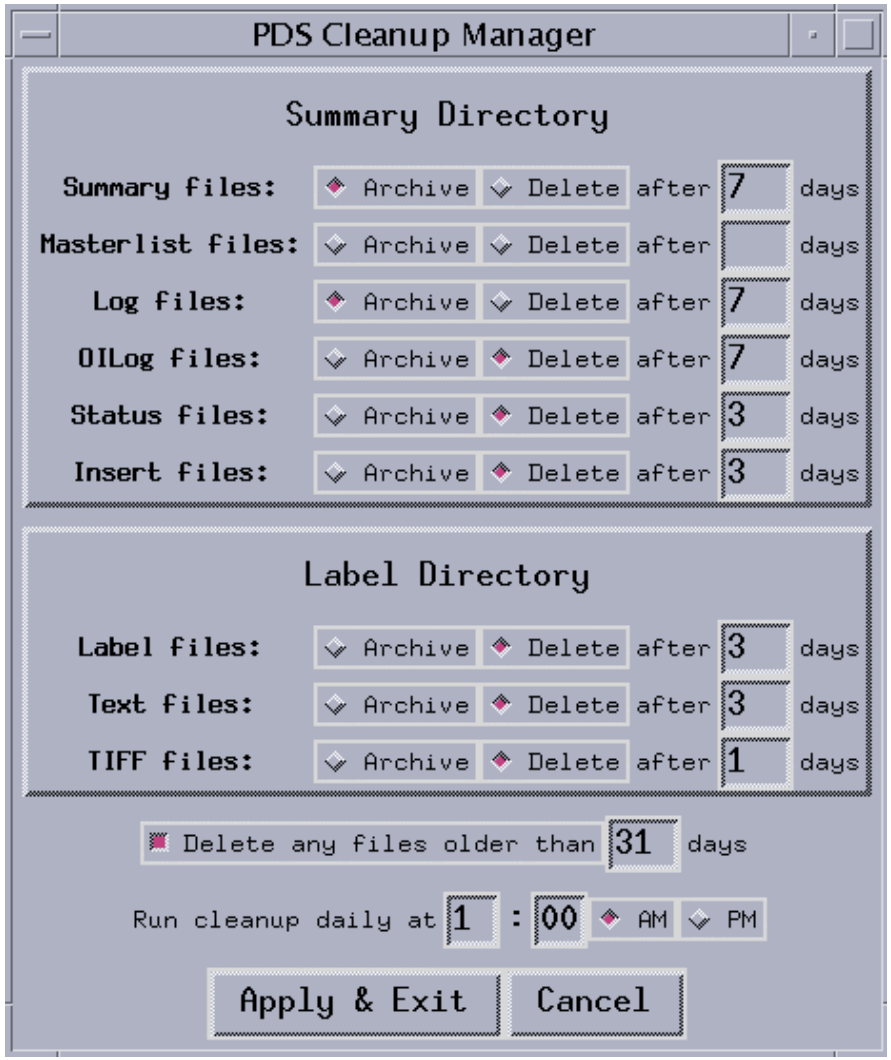
Using the PDS and PDSIS Cleanup Managers (Cont.)

- **Using the PDS Cleanup Manager: Procedure**
  - Access a terminal window logged in to the PDS Server
  - Change current directory to the “run” directory
  - Type the command to start the PDS Cleanup Manager GUI
  - Click on either the Archive or Delete radio button (as applicable) to the right of the types of files to be archived or deleted
  - Type the number of days after which files of that type are to be either archived or deleted
  - Click on the “Delete any files older than” radio button (if applicable)
  - In the text box type the appropriate number of days (older than which files should be deleted) (if applicable)

Using the PDS and PDSIS Cleanup Managers (Cont.)

- **Using the PDS Cleanup Manager: Procedure (Cont.)**
  - **Type the time when the cleanup should run in the "Run cleanup daily at" fields**
  - **Click on either the AM or PM radio button (as applicable)**
  - **Click on the Apply & Exit button**
  - **Click on the Proceed button**

PDS Cleanup Manager



Using the PDS and PDSIS Cleanup Managers

- **Using the PDSIS Cleanup Manager**
  - **GUI used for specifying a file cleanup strategy for the following types of PDSIS files:**
    - **Product request (“ODL”) files**
    - **Product result (“Prodres”) files**
    - **Socket log files**
  - **Generates or modifies a Bourne shell script (i.e., pdsiscleanup.sh) that implements the file cleanup strategy**
    - **In addition, the PDSIS Cleanup Manager may modify the crontab file to adjust the time intervals for deletion or archiving of files**

Using the PDS and PDSIS Cleanup Managers (Cont.)

- **Using the PDSIS Cleanup Manager (Cont.)**
  - **The large number of files generated by PDSIS activities would overwhelm the system if some of the files were not removed from the working directories on a fairly frequent basis**
    - » **However, some files may be required for a limited period of time in order to troubleshoot an order if there is a problem with it or if it is returned from the customer**
  - **PDSIS Cleanup Manager is not used very often, especially if a manageable retention period has been established for PDSIS files**

Using the PDS and PDSIS Cleanup Managers (Cont.)

- **Using the PDSIS Cleanup Manager: Procedure**

  NOTE: A PDSIS user ID (e.g., pdsis, pdsis_ts1, pdsis_ts2) is used in this procedure

  – **Access a terminal window logged in to the PDS Server**

  – **Change current directory to the "utilities" directory**

  – **Type the command to start the PDSIS Cleanup Manager GUI**

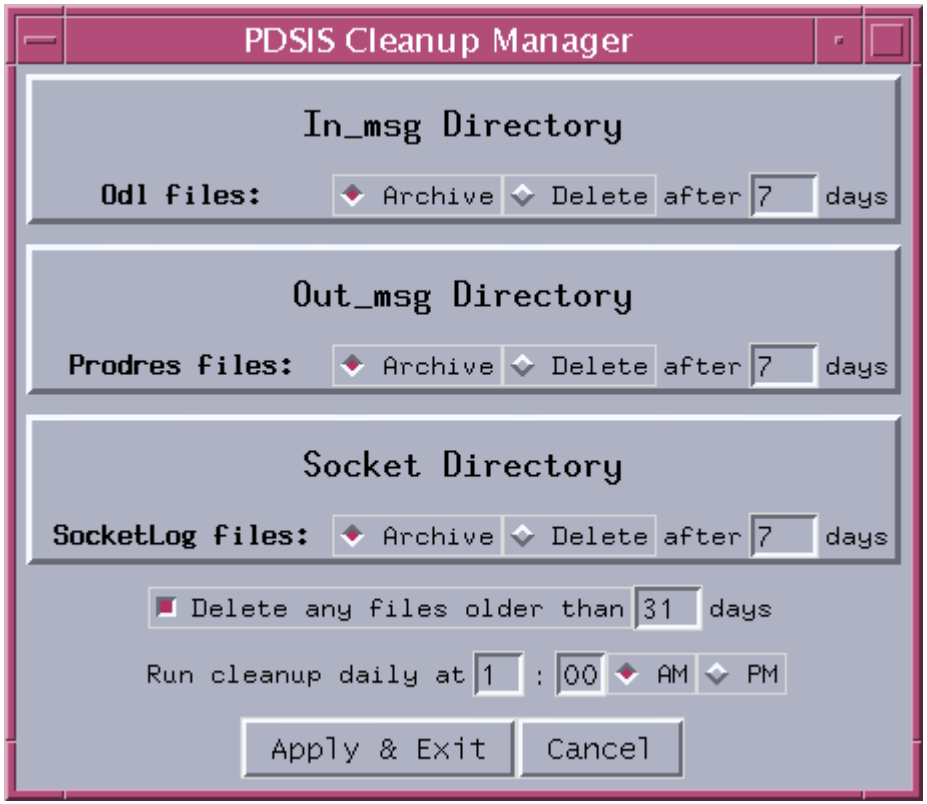
  – **Click on either the Archive or Delete radio button (as applicable) to the right of the types of files to be archived or deleted**

  – **Type the number of days after which files of that type are to be either archived or deleted**

Using the PDS and PDSIS Cleanup Managers (Cont.)

- **Using the PDSIS Cleanup Manager: Procedure (Cont.)**
  - Click on the "Delete any files older than" radio button (if applicable)
  - In the text box type the appropriate number of days (older than which files should be deleted) (if applicable)
  - Type the time when the cleanup should run in the "Run cleanup daily at" fields
  - Click on either the AM or PM radio button (as applicable)
  - Click on the Apply & Exit button
  - Click on the Proceed button

PDSIS Cleanup Manager



Troubleshooting PDS Problems

- **Trouble Symptoms**
  - **Troubleshooting is a process of identifying the source of problems on the basis of observed trouble symptoms**
  - **Many problems with PDS can be traced to some part of the PDS itself**
  - **A common source of problems involves the reliance on messages or data from other subsystems; consequently, it is possible to trace some problems to an ECS subsystem, including (but not necessarily limited to) those in the following list:**
    - » **Data Management Subsystem (DMS)**
    - » **Data Server Subsystem (DSS)**
    - » **System Management Subsystem (MSS)**
    - » **Communications Subsystem (CSS)**

Troubleshooting PDS Problems

- **Trouble Symptoms (Cont.)**
  - **The general process of troubleshooting involves the following activities:**
    - » **Review the trouble symptoms**
    - » **Check the status of relevant hosts/servers (as necessary)**
    - » **Check log files (as necessary)**
    - » **Take action to correct the problem(s)**
  - **If a problem is suspected in one of the subsystems in the preceding list, refer to the section on Troubleshooting DDIST Problems**

Troubleshooting PDS Problems (Cont.)

- **Troubleshooting PDS Problems**
  - **Actions to be taken in response to some common PDS problems are described in the following tables:**
    - » **General Problems**
    - » **PDS Operator Interface (PDSOI) Problems**
    - » **Job Monitor Problems**
    - » **PDS Maintenance Module Problems**
    - » **PDSIS Operator Interface (PDSIS OI) Problems**
    - » **PDSIS Maintenance Module Problems**

Troubleshooting PDS Problems (Cont.): General Problems

Symptom	Response
A selection has been made from an **Action List** window but the action is not invoked	Click on the **OK** button near the bottom of the **Action List** window to start the action or go to the appropriate screen.
Buttons are not visible at the bottom of the screen but they should be visible	1. Move the mouse to the outside edge of the form. (The cursor changes shape.) 2. Click and hold the mouse button and move the mouse to resize the screen until the buttons are visible.
Disk label needs to be reprinted	Perform the procedure for **Reprinting a Label Stamped on a Disk** (subsequent section of this lesson).
Jewel-case insert did not print	Perform the procedure for **Responding to a Jewel-Case Insert Printing Failure** (subsequent section of this lesson).
Jewel-case insert needs to be reprinted	Perform the procedure for **Responding to a Jewel-Case Insert Printing Failure** (subsequent section of this lesson).
Job needs to be reprocessed [e.g., product has stalled in the media production process or fails the media quality control (QC) check]	Perform the procedure for **Reprocessing a Job** (subsequent section of this lesson).
Lag report includes a job that is not displayed on the PDSOI	Perform the procedure for **Responding to a Job on a Lag Report** (subsequent section of this lesson).
Media Drive Selection window does not appear in the workspace within a couple of minutes after a job/unit has been activated	Perform the procedure for **Responding to a "Waiting for Drive Selection" Message on the Job Monitor** (subsequent section of this lesson).

Troubleshooting PDS Problems (Cont.): General Problems (Cont.)

Symptom	Response
No printouts	Perform the procedure for **Responding to No Printouts (Either Jewel-Case Inserts or Paper Reports)** (subsequent section of this lesson).
Not all text is showing in a text box or the box appears to be too small	1. Click in the text box. 2. Move the cursor using the arrow keys. [The text scrolls in the box and hidden text becomes visible.]
Packing list for a completed order (i.e., an order with a status of "C") needs to be reprinted	Set the action flag to "S" using the PDSIS Maintenance Module as described in the procedure for **Changing the Values of Order Parameters Using the PDSIS Maintenance Module** (subsequent section of this lesson).
Rimage (CD or DVD) drive goes off line.	Verify that the blank media were placed in the Rimage input bins with the shiny side down.
Shipping label for a completed order (i.e., an order with a status of "C") needs to be reprinted	Set the action flag to "S" using the PDSIS Maintenance Module as described in the procedure for **Changing the Values of Order Parameters Using the PDSIS Maintenance Module** (subsequent section of this lesson).
Summary report is not printed but disk or tape is produced	Perform the procedure for **Responding to No Printouts (Either Jewel-Case Inserts or Paper Reports)** (subsequent section of this lesson).
Tape label needs to be reprinted	Perform the procedure for **Reprinting PDS Documents and Labels** (subsequent section of this lesson).
Units that were previously completed need to be reactivated or reset	Perform the procedure for **Reactivating Units** or the procedure for **Resetting an Order or a Unit** (as applicable) (subsequent sections of this lesson).

Troubleshooting PDS Problems (Cont.)

- **PDS Troubleshooting Procedures**
  - Changing the Values of Job Parameters Using the PDS Maintenance Module
  - Changing the Values of Order Parameters Using the PDSIS Maintenance Module
  - Checking/Clearing Errors on PDSIS
  - Checking PDSSA or PDSIS Log Files
  - Checking/Restoring Synchronization of the Rimage PC Time with PDS System Time
  - Checking/Restoring the Rimage PC NFS Connection
  - Cleaning up the CD-R_Images Folder on the Rimage PC
  - Clearing an Error Displayed on the PDSIS OI Error Screen

Troubleshooting PDS Problems (Cont.)

- **PDS Troubleshooting Procedures (Cont.)**
  - Determining Output Specifications Using the PDS Maintenance Module
  - Determining Output Specifications Using the PDSIS Maintenance Module
  - Determining Product Codes Using the PDS Maintenance Module
  - Determining Product Codes Using the PDSIS Maintenance Module
  - Determining the Status of PDS Tape/Disk Drives
  - Determining Which Instance of PDSOI Was Used to Activate a Job
  - Forcing AutoRimage Completion
  - Reactivating Units
  - Reprinting a Label Stamped on a Disk

Troubleshooting PDS Problems (Cont.)

- PDS Troubleshooting Procedures (Cont.)
  - Reprinting PDS Documents and Labels
  - Reprocessing a Job
  - Resetting an Order or Unit
  - Responding to a CD/DVD Job Error Indicated on PDSOI
  - Responding to a Jewel-Case Insert Printing Failure
  - Responding to a Job's Status Not Changing to QC-Hold Although Production is Successful
  - Responding to a Job on a Lag Report
  - Responding to a Locked-Up Screen
  - Responding to a Problem Starting PDSOI
  - Responding to a Save Changes Dialogue Box When Exiting a Maintenance Module Window

Troubleshooting PDS Problems (Cont.)

- PDS Troubleshooting Procedures (Cont.)
  - Responding to a "Waiting for Drive Selection" Message on the Job Monitor
  - Responding to Duplicate Jobs on the PDSOI
  - Responding to Low Disk Space
  - Responding to No Printouts (Either Jewel-Case Inserts or Paper Reports)
  - Responding to PDSOI's Failure to Update Status
  - Viewing a Job Log or Job Production Parameter File (PPF) Using UNIX Commands
  - Viewing a Job Log Using the PDS Job Monitor
  - Viewing a Job Production Parameter File (PPF) Using the PDS Job Monitor
  - Viewing an Extended Error Message

Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Job Parameters Using the PDS Maintenance Module**
  - **The PDS Maintenance Module provides a means of changing values assigned to job parameters:**
    - » **Status - may be changed (for example) to "Pending" so the job will rerun (e.g., if there was a problem with the previous run of the job)**
    - » **Media type - typically changed in response to a request from the user that has been forwarded by User Services**
    - » **Output specs - output specifications typically have to be changed if the media type is changed**
    - » **Number of copies - may be changed in response to a request from the user that has been forwarded by User Services (usually in-house orders)**
    - » **Directory path for pulling data for a job - if (for example) a problem occurs with the disk on which the normal directory resides**

Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Job Parameters Using the PDS Maintenance Module**
  - **The PDS Maintenance Module provides a means of changing values assigned to job parameters (Cont.):**
    - » **E-Mail address for ftp notification of completion - e.g., in response to a request from User Services**
  - **In order to maintain consistency between PDSIS packing lists and PDSSA media generation, changes to the values assigned to order/job parameters may need to be made using both the PDSIS and PDSSA maintenance modules**
    - » **Changes that affect both PDSIS and PDSSA should be made in PDSIS first, then PDSSA**
    - » **Some changes affect PDSIS only; for example, PDSSA does not contain customer shipping address information, so no shipping-address changes are necessary in PDSSA**

Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Job Parameters Using the PDS Maintenance Module (Cont.)**
  - **No changes are needed in PDSSA if order processing in PDSIS has not made any data for an order available to PDSSA yet**

CAUTION

Before changing product media type, number of copies, or customer's e-mail address it is advisable to have in hand written authorization to do so

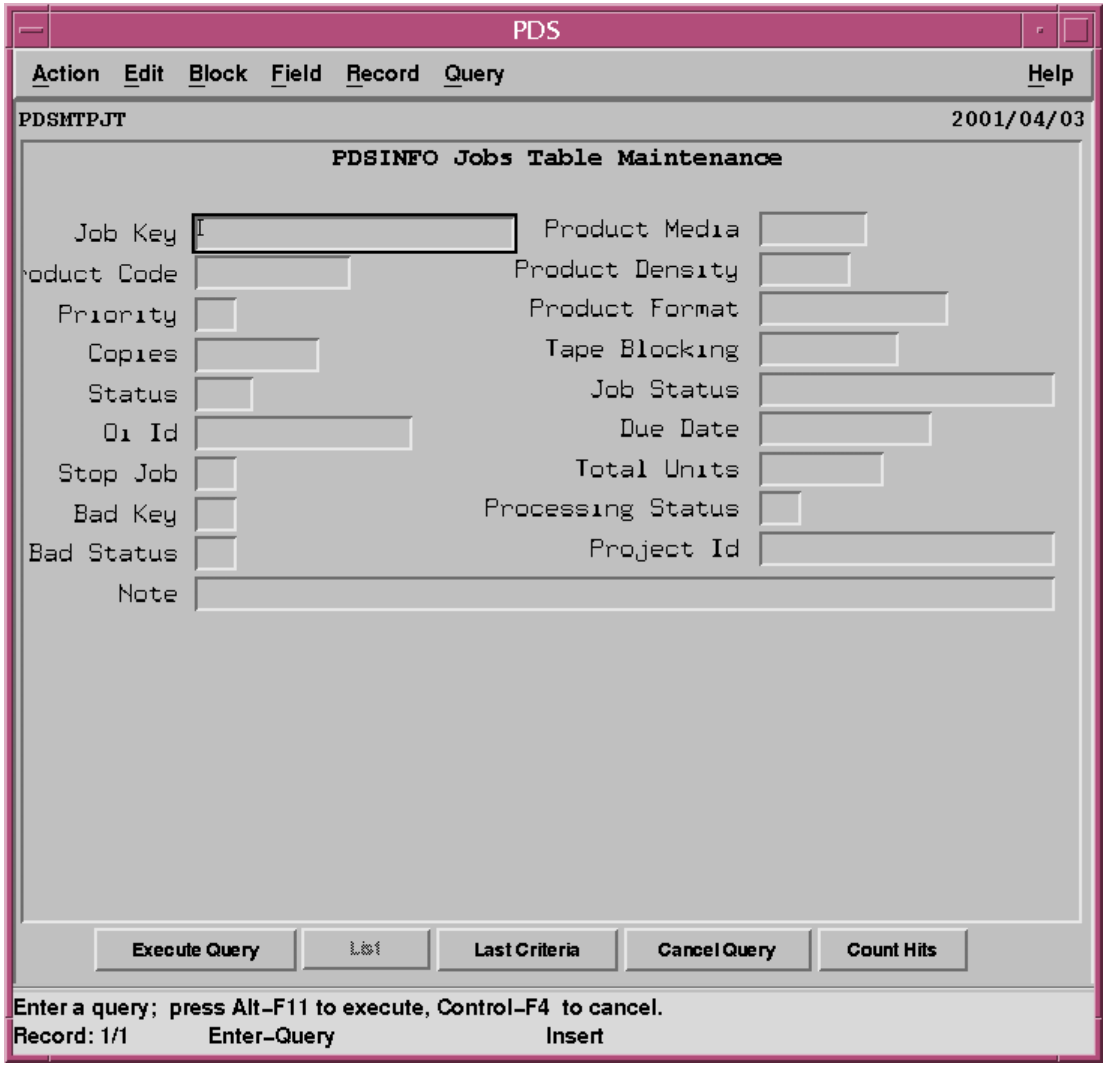
Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Job Parameters Using the PDS Maintenance Module: Procedure**
  - Start the PDS Maintenance Module
  - Click on the PDSINFO Jobs Table button
  - Copy the job key from the Main OI Screen to the PDSINFO Jobs Table
  - Click on the Execute Query button
  - Enter the new value(s) in the appropriate field(s)
  - Click on the Save button
  - Click on the Exit button
  - Click on the PDSINFO Work Table button
  - Copy the job key from the Main OI Screen
  - Click on the Execute Query button

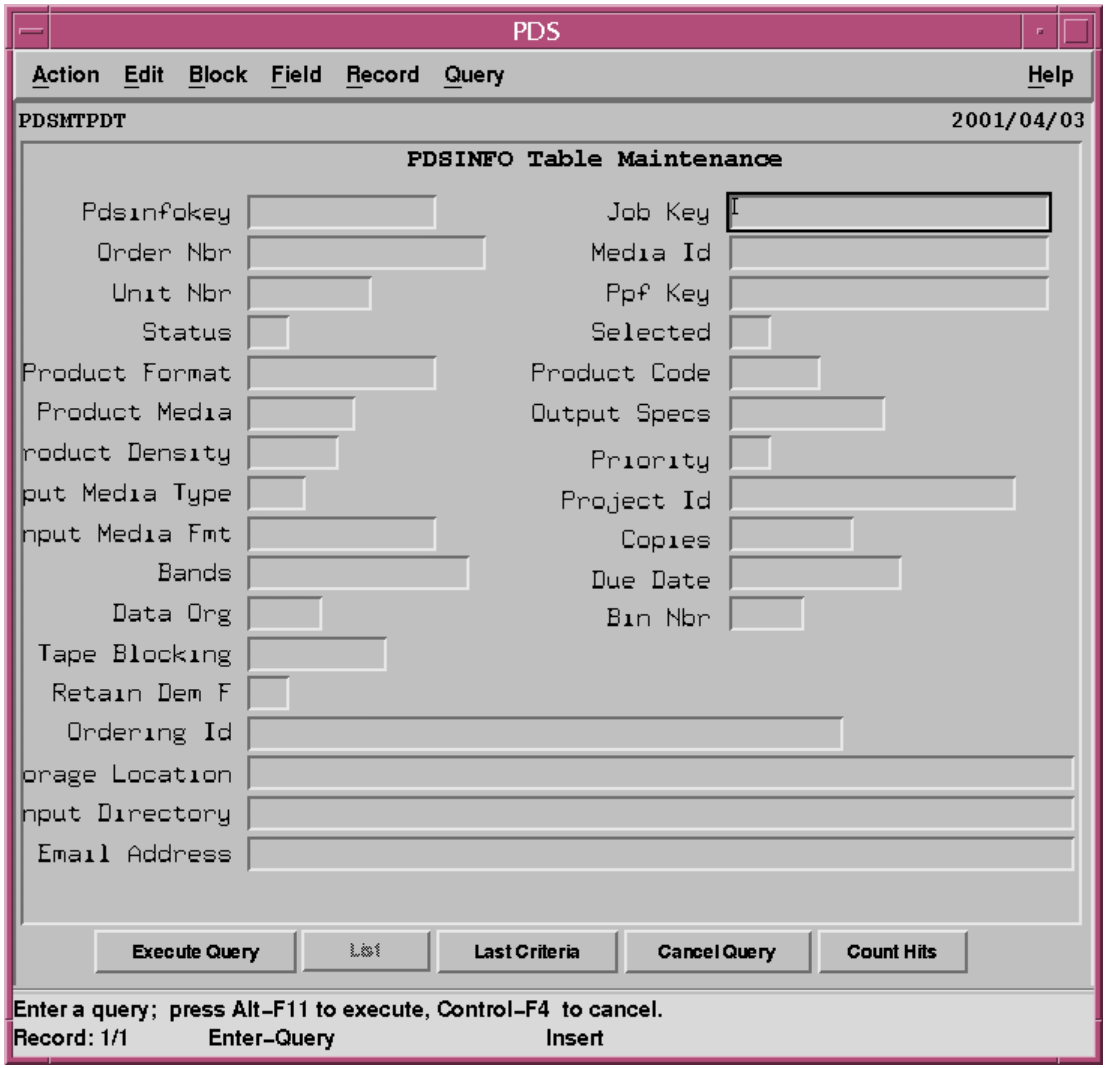
Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Job Parameters Using the PDS Maintenance Module: Procedure (Cont.)**
  - **Ensure that the correct record is displayed on the PDSINFO Work Table**
  - **Enter the new value(s) in the appropriate field(s)**
  - **Click on the Save button**
  - **Repeat steps for additional records that need to be modified for the job**
  - **Click on the Exit button at the bottom of the PDSINFO Work Table**
  - **Click on the Exit button at the bottom of the PDS Maintenance Module Main Menu window**

PDS Maintenance Module: PDSINFO Jobs Table



PDS Maintenance Module: PDSINFO Work Table



Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Order Parameters Using the PDSIS Maintenance Module**
  - **The PDSIS Maintenance Module provides a means of changing values assigned to order parameters:**
    - **Status of an order or unit**
    - **Action to be sent to an order or unit**
    - **Error flag for an order or unit**
    - **Output specification for a unit**
    - **Number of copies of a unit**
    - **Directory (location) for PDSSA to pull data for a unit**
    - **E-Mail address for ftp notification of order completion**

Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Order Parameters Using the PDSIS Maintenance Module (Cont.)**
  - **In order to maintain consistency between PDSIS packing lists and PDSSA media generation, changes to the values assigned to order/job parameters may need to be made using both the PDSIS and PDSSA maintenance modules**
    - » **Changes that affect both PDSIS and PDSSA should be made in PDSIS first, then PDSSA**
    - » **Some changes affect PDSIS only; for example, PDSSA does not contain customer shipping address information, so no shipping-address changes are necessary in PDSSA**
  - **No changes are needed in PDSSA if order processing in PDSIS has not made any data for an order available to PDSSA yet**

Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Order Parameters Using the PDSIS Maintenance Module (Cont.)**

CAUTION

Before changing output specs or number of copies it is advisable to have in hand written authorization to do so

Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Order Parameters Using the PDSIS Maintenance Module: Procedure**
  - **Start the PDSIS Maintenance Module**
  - **Click on the PDSIS Orders button**
  - **Copy the order number from the PDSIS OI Main Screen to the PDSIS Orders Maintenance Form**
  - **Click on the Execute Query button**
  - **Enter the new value(s) in the appropriate field(s)**
  - **Click on the Save button**
  - **Click on the Exit button**
  - **Click on the PDSIS Units button**
  - **Copy the order number from the PDSIS OI Main Screen**

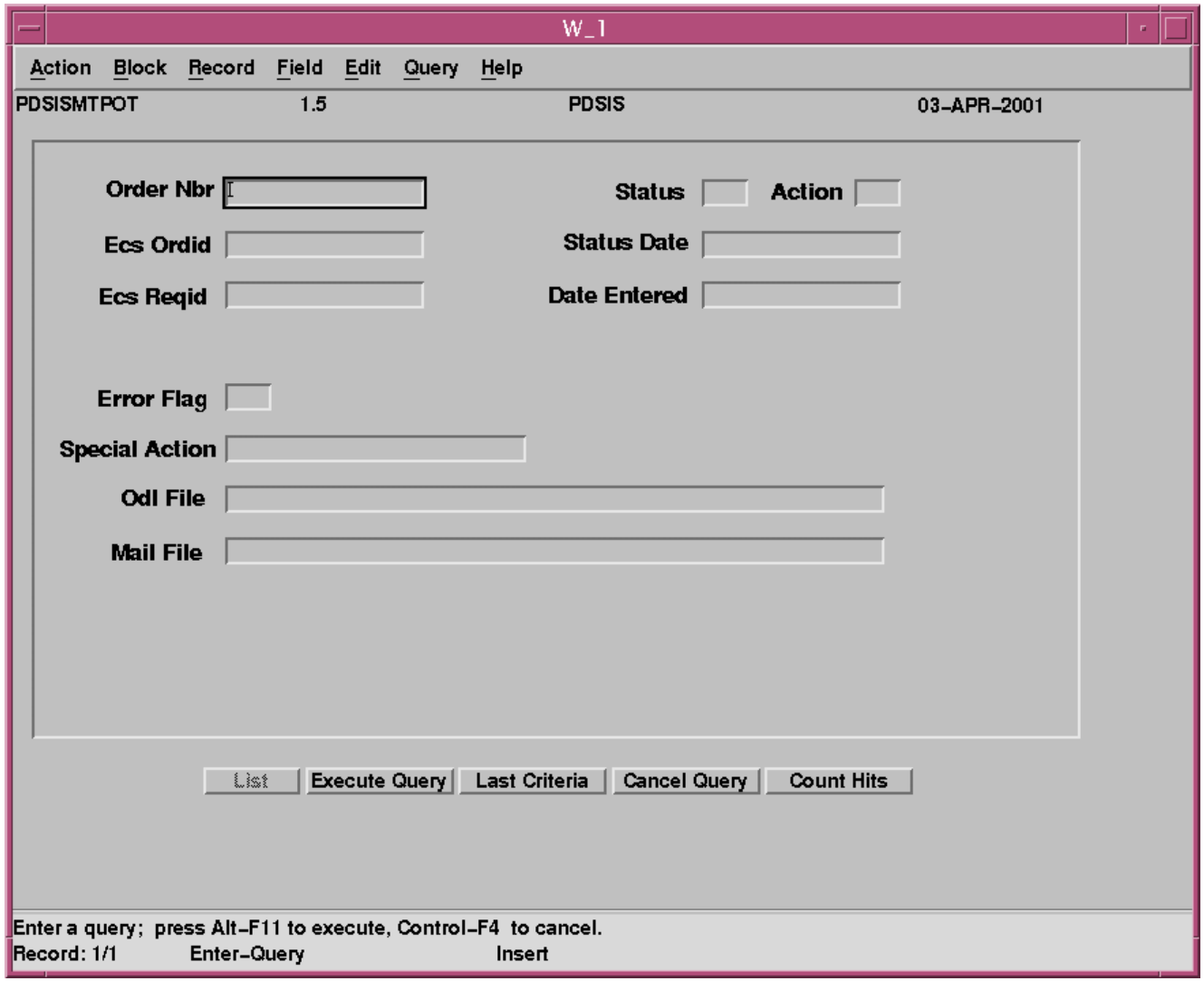
Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Order Parameters Using the PDSIS Maintenance Module: Procedure (Cont.)**
  - **Click on the Execute Query button**
  - **Ensure that the correct record is displayed on the PDSINFO Work Table**
  - **Enter the new value(s) in the appropriate field(s)**
  - **Click on the Save button**
  - **Repeat steps for additional records that need to be modified for the job**
  - **Click on the Exit button at the bottom of the PDSIS Units Maintenance Form**
  - **Click on the PDSIS Address button**
  - **Copy the order number from the PDSIS OI Main Screen**

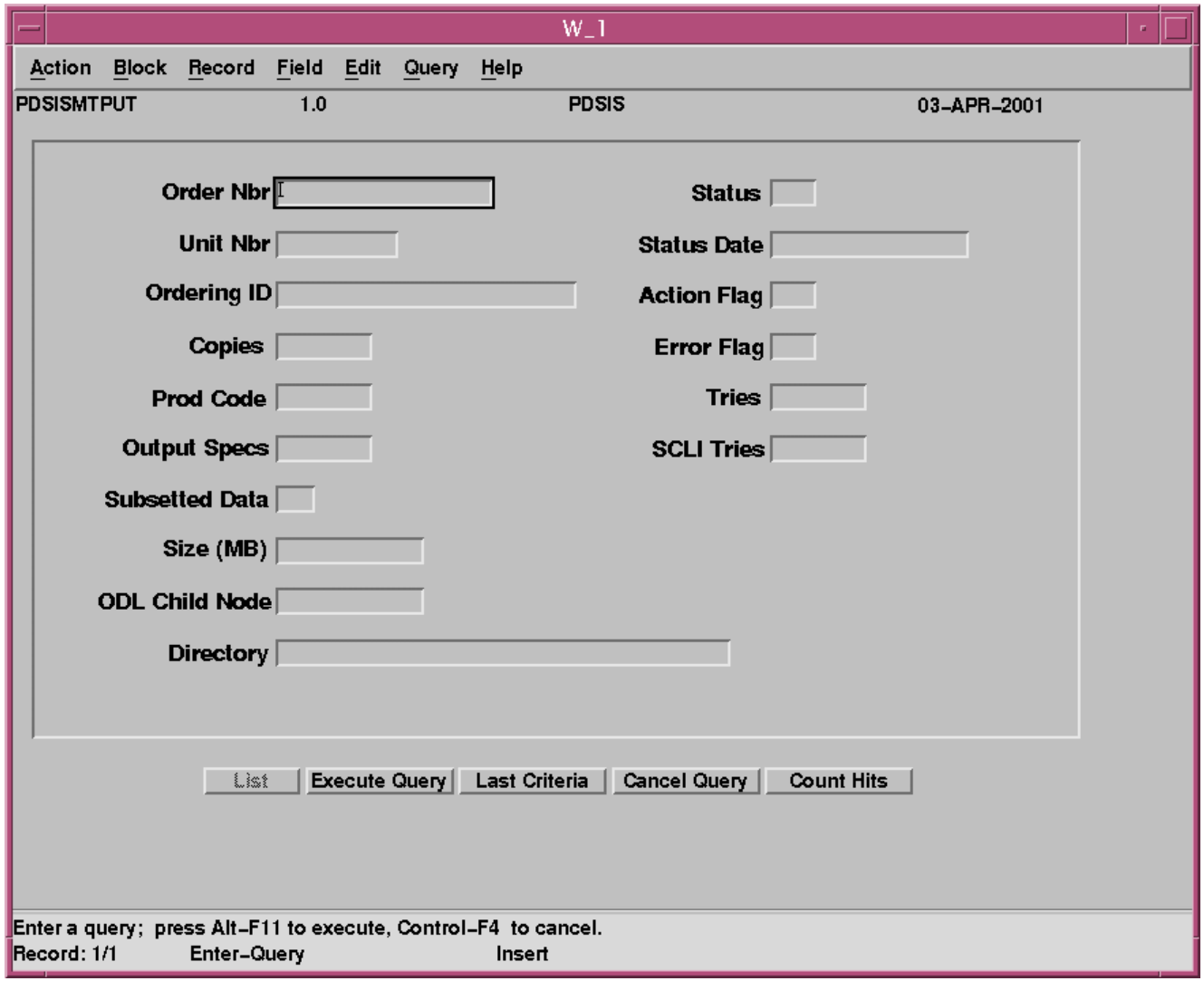
Troubleshooting PDS Problems (Cont.)

- **Changing the Values of Order Parameters Using the PDSIS Maintenance Module: Procedure (Cont.)**
  - **Click on the Execute Query button**
  - **Ensure that the correct record is displayed on the on the PDSIS Address Maintenance Form**
  - **Enter the new value(s) in the Email field**
  - **Click on the Save button**
  - **Click on the Exit button**
  - **Click on the Exit button at the bottom of the PDSIS Maintenance Module Main Menu window**

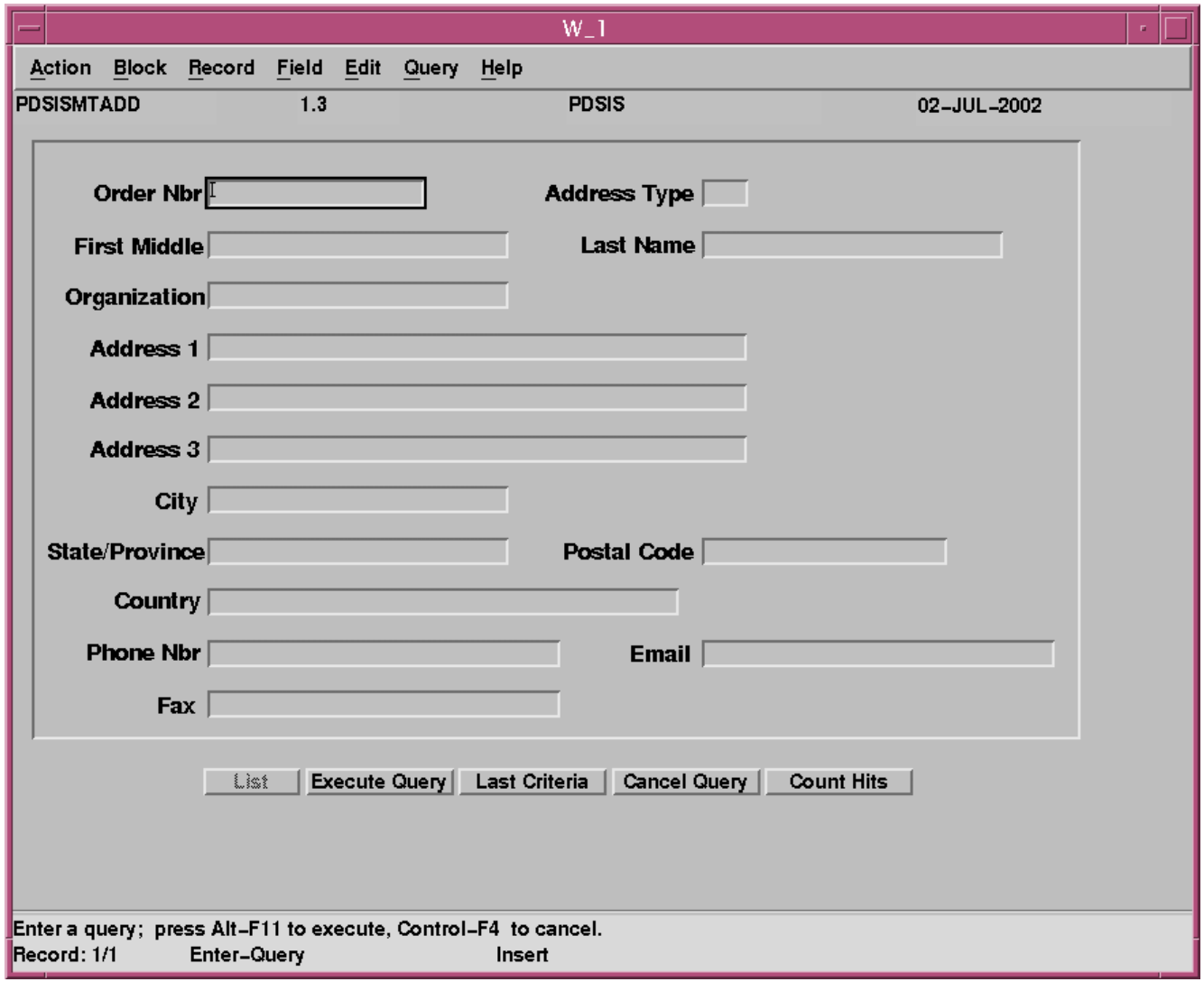
PDSIS Orders Maintenance Form (PDSISMTPOT)



PDSIS Units Maintenance Form (PDSISMTPUT)



PDSIS Address Maintenance Form (PDSISMTADD)



Troubleshooting PDS Problems (Cont.)

- **Checking/Clearing Errors on PDSIS**
  - **Both the PDSIS OI Main Screen and the PDSIS OI Detail Screen provide means of checking and/or clearing errors associated with PDS orders**

Troubleshooting PDS Problems (Cont.)

- **Checking/Clearing Errors on PDSIS: Procedure**
  - Click on the action button at the beginning of the relevant order status line or unit line
  - Select (highlight) Errors in the Action List box
  - Click on the OK button
  - Observe information displayed on the PDSIS OI Error Screen
  - To see an extended error message, perform the procedure for Viewing an Extended Error Message (subsequent section of this lesson)
  - To clear an error displayed on the PDSIS OI Error Screen, perform the procedure for Clearing an Error Displayed on the PDSIS OI Error Screen (subsequent section of this lesson)
  - Repeat steps as necessary
  - Click on the Return button

Troubleshooting PDS Problems (Cont.)

- **Checking PDSSA or PDSIS Log Files**
  - **PDSIS maintains the following kinds of daily logs for PDSIS troubleshooting purposes:**
    - » **Error log**
    - » **Debug log**
    - » **Socket log**
  - **PDSSA maintains the following kinds of logs:**
    - » **Operator Interface log (oilog)**
    - » **Job log**
  - **The PDS Cleanup Manager cleans up the PDSSA logs in accordance with the current PDSSA file cleanup strategy**
  - **The PDSIS Cleanup Manager cleans up the PDSIS socket logs in accordance with the current PDSIS file cleanup strategy**

Troubleshooting PDS Problems (Cont.)

- **Checking PDSSA or PDSIS Log Files: Procedure**
  - **Access a terminal window logged in to the PDS Server host**
  - **Change directory to the directory containing the PDSSA or PDSIS log files**
  - **View the log file (e.g., type pg *filename* then press Return/Enter)**
  - **Review the log file to identify problems that have occurred**
  - **Respond to problems**
    - » **PDSIS- or PDSSA-related problems**
    - » **Communication problems**
    - » **Database problems**
    - » **Lack of disk space**

Troubleshooting PDS Problems (Cont.)

- **Checking/Restoring Synchronization of the Rimage PC Time with PDS System Time**
  - **Time on the Rimage PC must be set to within five (5) minutes of the time on the PDS Server host**
    - » **If the time is not properly synchronized, CD and DVD jobs cannot proceed to a QC-Hold status**
- **Checking/Restoring Synchronization of the Rimage PC Time with PDS System Time: Procedure**
  - **Access a terminal window logged in to the PDS Server host**
  - **At the UNIX command line prompt on the PDS Server host type date then press the Return/Enter key**

Troubleshooting PDS Problems (Cont.)

- **Checking/Restoring Synchronization of the Rimage PC Time with PDS System Time: Procedure (Cont.)**
  - **On the Rimage PC double-click on the time displayed on the Windows task bar**
  - **If the date and time displayed on the Rimage PC are the same as those displayed on the PDS Server host, click on the Cancel button in the Date/Time Properties window on the Rimage PC**
    - » **End of procedure**

    If the time displayed on the Rimage PC is not the same as that displayed on the PDS Server host, on the Rimage PC enter the correct value(s) (as displayed on the PDS Server host) for the hour, minute and/or second in the digital time display
  - **Click on the OK button**

Troubleshooting PDS Problems (Cont.)

- **Checking/Restoring the Rimage PC NFS Connection**
  - **A Network File System (NFS) mount is needed in order for the Rimage software to see the job control directory (e.g., /pdssa/rimage_jobcontrol) on the PDS Server host**
  - **When the Windows NT system for the Rimage PC is set up, the PDS job control directory is typically mapped to the PC's Z: drive**

Troubleshooting PDS Problems (Cont.)

- **Checking/Restoring the Rimage PC NFS Connection: Procedure**
  - **Select Start → Programs → Windows NT Explorer from the Windows task bar**
  - **In the left (All Folders) frame, scroll down to determine whether there is a network drive Z: to which rimage_jobcontrol is mapped**
  - **If there is a network drive Z: to which rimage_jobcontrol is mapped, click on the icon for the drive**
  - **If there is a problem with the NFS connection…**
    - » **Shut down the Rimage CD production software**
    - » **Select Start → Shut Down from the Windows task bar**
    - » **Click on the "Restart the computer?" radio button**
    - » **Click on the Yes button**

Troubleshooting PDS Problems (Cont.)

- **Checking/Restoring the Rimage PC NFS Connection: Procedure**
  - **If there is a problem with the NFS connection… (Cont.)**
    - » **Simultaneously press the Ctrl, Alt, and Delete keys on the keyboard**
    - » **Click on the OK button**
    - » **Ensure that the entries in the Username and Domain fields of the Logon Information window are correct**
    - » **Type the appropriate password in the Password field**
    - » **Click on the OK button**
    - » **Recheck the Rimage PC NFS connection**
  - **If the Rimage CD production software was shut down, restart the Rimage CD production software**
  - **Return to the procedure that recommended checking/restoring the Rimage PC NFS connection**

Troubleshooting PDS Problems (Cont.)

- **Cleaning up the CD-R_Images Folder on the Rimage: Procedure**
  - **Double-click on the My Computer icon on the Rimage PC**
  - **Double-click on the icon for the appropriate drive (e.g., the E: drive)**
  - **Double-click on the icon for the CD-R_Images folder**
  - **Highlight and delete all unneeded files from the CD-R_Images folder**
  - **Select File → Production Order Editor from the pull-down menu in the Production Server window**
  - **Highlight and delete all unneeded files**
  - **Empty the Recycle Bin icon on the PC desktop**
  - **Dismiss the unneeded windows (click on the X in the box at the upper right-hand corner of each folder window)**

Troubleshooting PDS Problems (Cont.)

- **Clearing an Error Displayed on the PDSIS OI Error Screen: Procedure**

  NOTE: It is generally good practice to ensure that the condition that caused an error has been corrected before clearing the error on the GUI (operator interface); otherwise, the error may recur

  – **Click on the action button at the beginning of the relevant error status line**

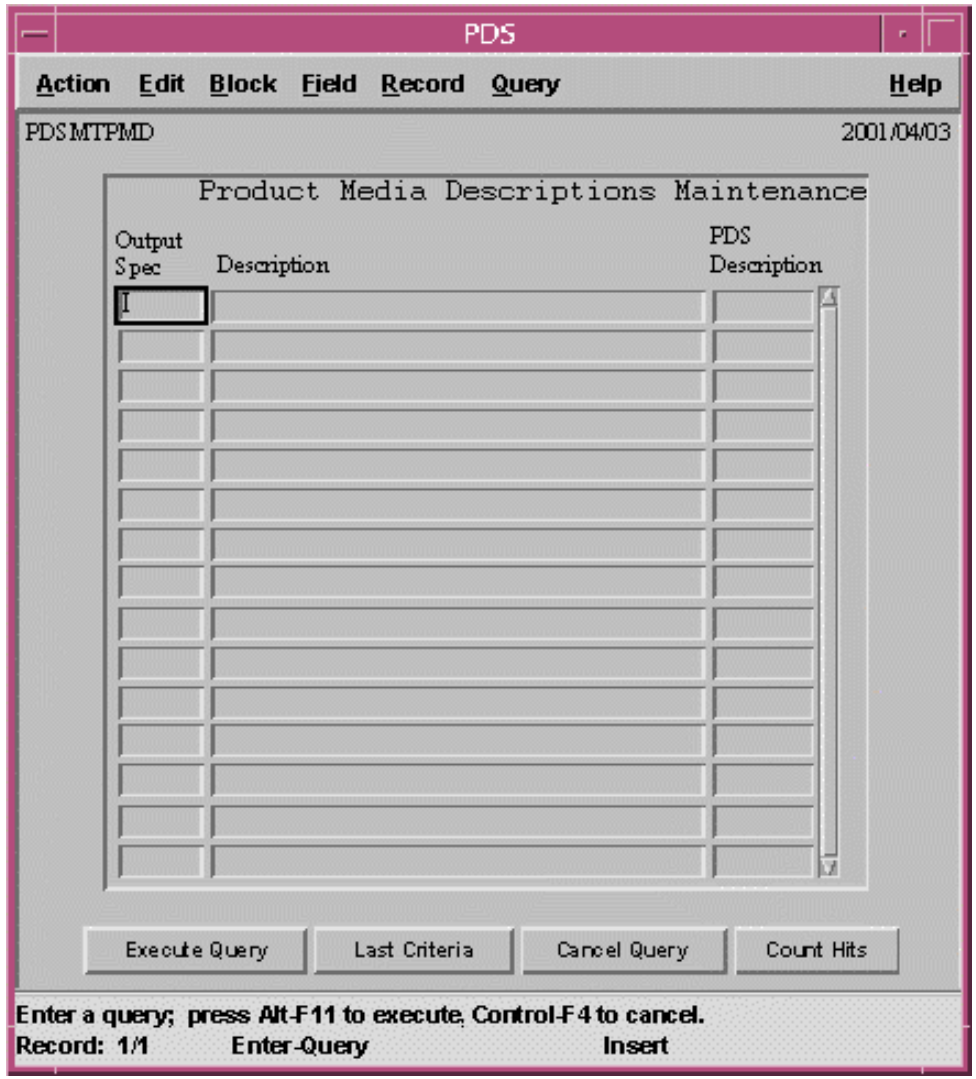
  – **Select (highlight) Clear Error in the Action List box**

  – **Click on the OK button**

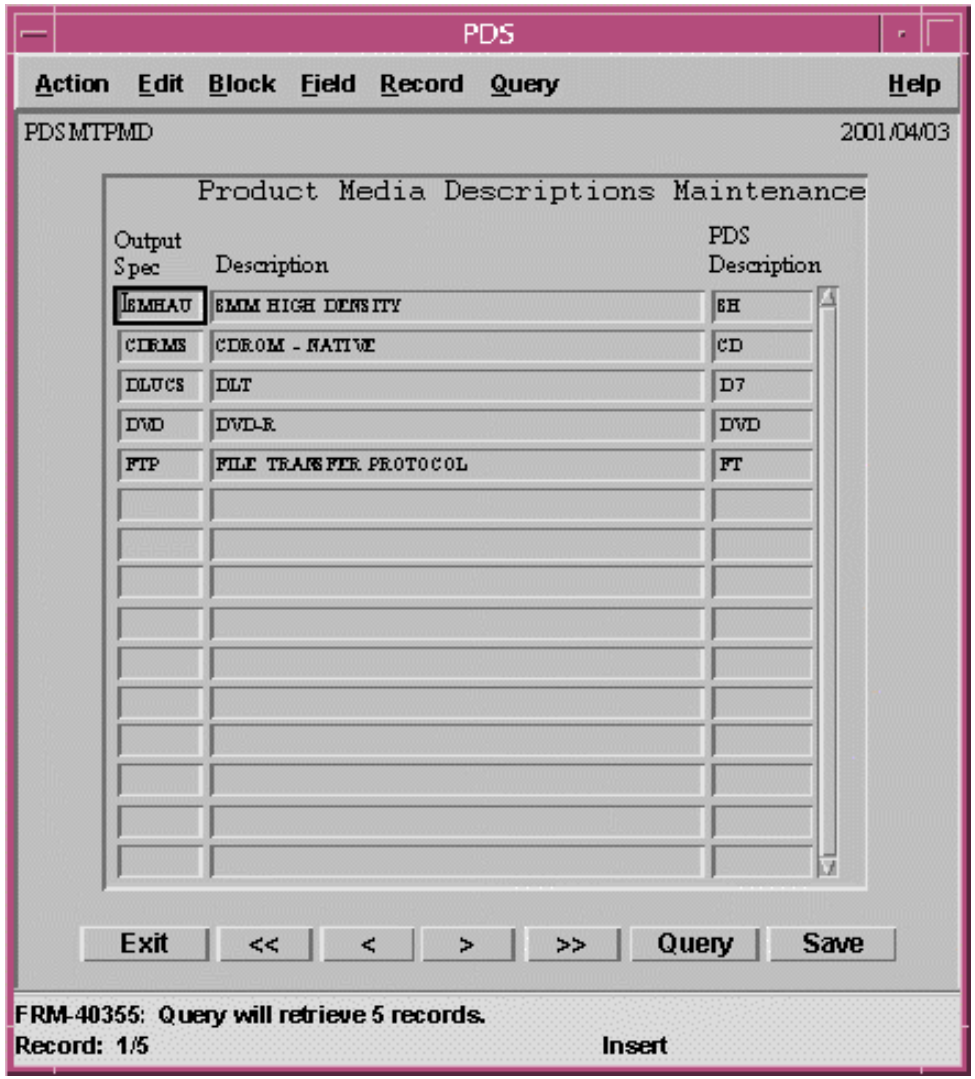
Troubleshooting PDS Problems (Cont.)

- **Determining Output Specifications Using the PDS Maintenance Module: Procedure**
  - **Start the PDS Maintenance Module**
  - **Click on the Product Media Descriptions button**
  - **Click on the Execute Query button**
  - **Observe the data displayed on the Product Media Descriptions Maintenance Form to determine whether the relevant product code has appropriate values**
  - **Click on the Exit button at the bottom of the Product Media Descriptions Maintenance Form**
  - **Click on the Exit button at the bottom of the PDS Maintenance Module Main Menu window**

PDS Product Media Descriptions Maintenance Form (PDSMTPMD)



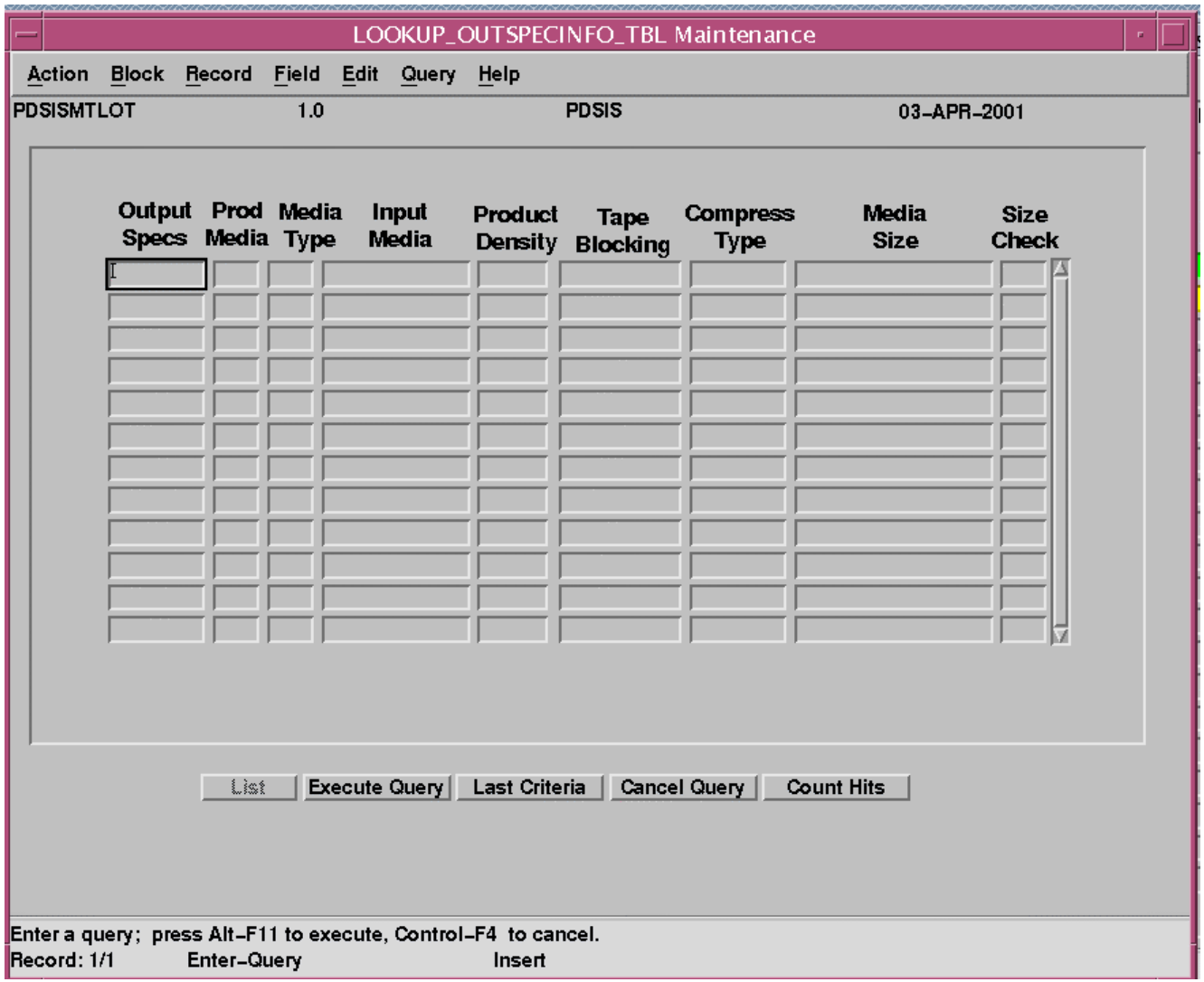
PDS Product Media Descriptions Form Displaying Output Specs



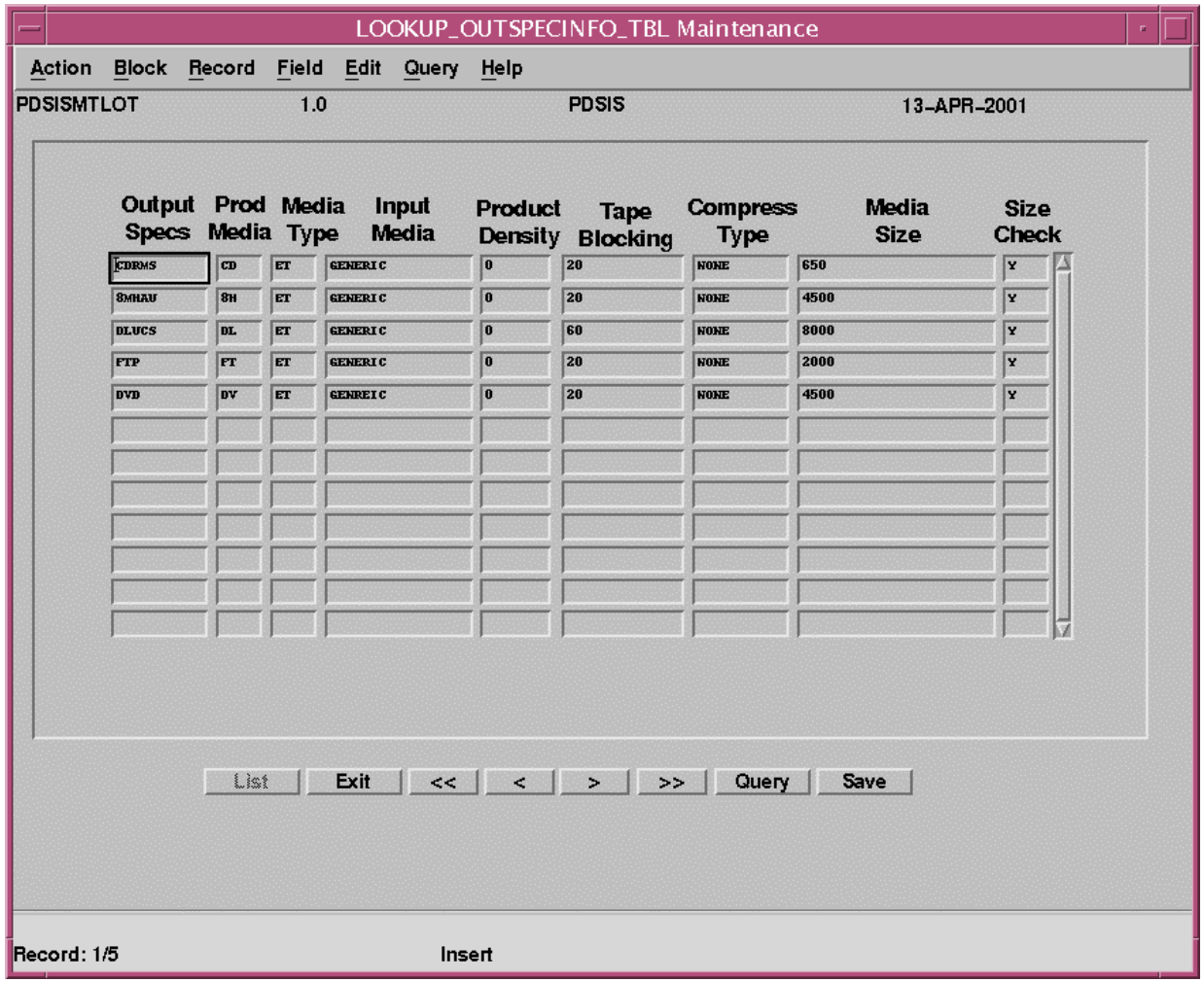
Troubleshooting PDS Problems (Cont.)

- **Determining Output Specifications Using the PDSIS Maintenance Module: Procedure**
  - **Start the PDSIS Maintenance Module**
  - **Click on the Outspec Info button**
  - **Click on the Execute Query button**
  - **Observe the data displayed on the PDSIS Output Specifications Window to determine the relevant output specifications**
  - **Click on the Exit button at the bottom of the PDSIS Output Specifications Window**
  - **Click on the Exit button at the bottom of the PDSIS Maintenance Module Main Menu window**

PDSIS Maintenance Module: Output Specifications Window



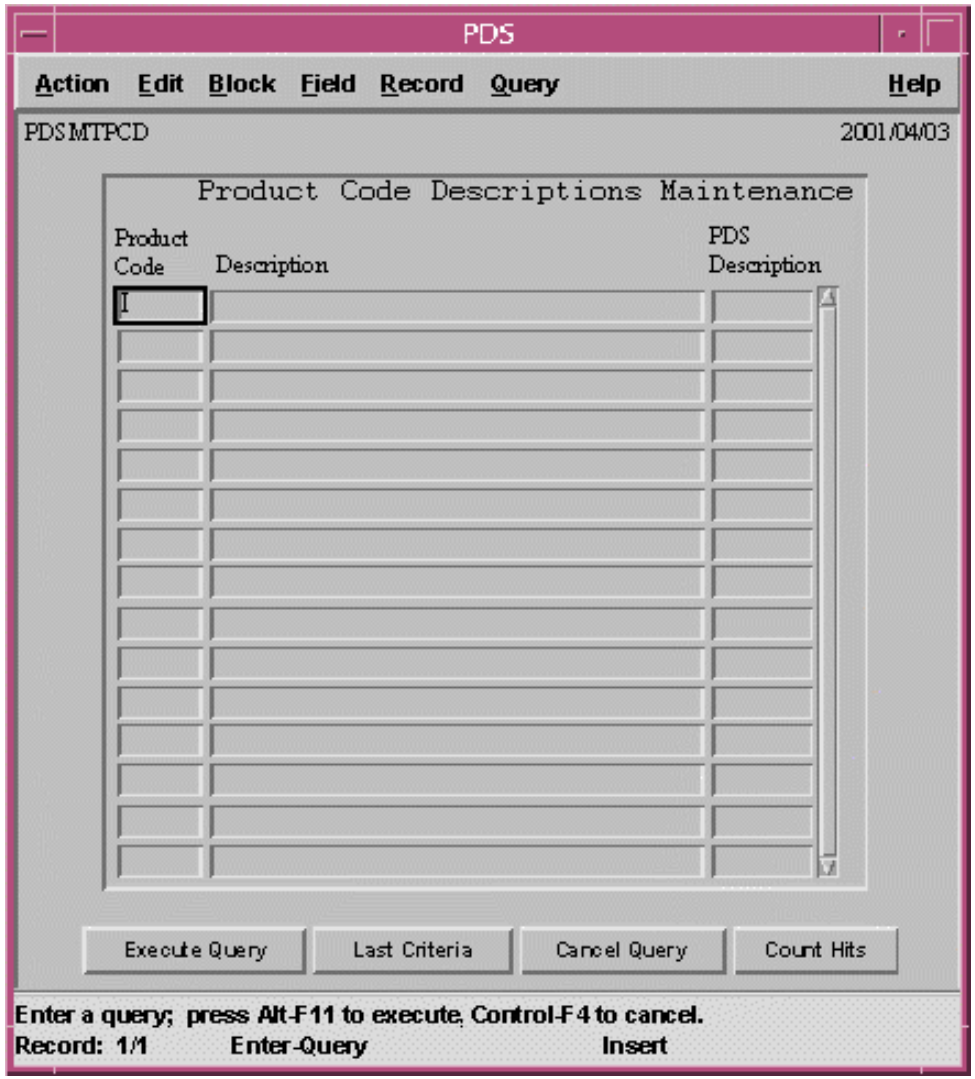
PDSIS Output Specifications Window Displaying Specifications



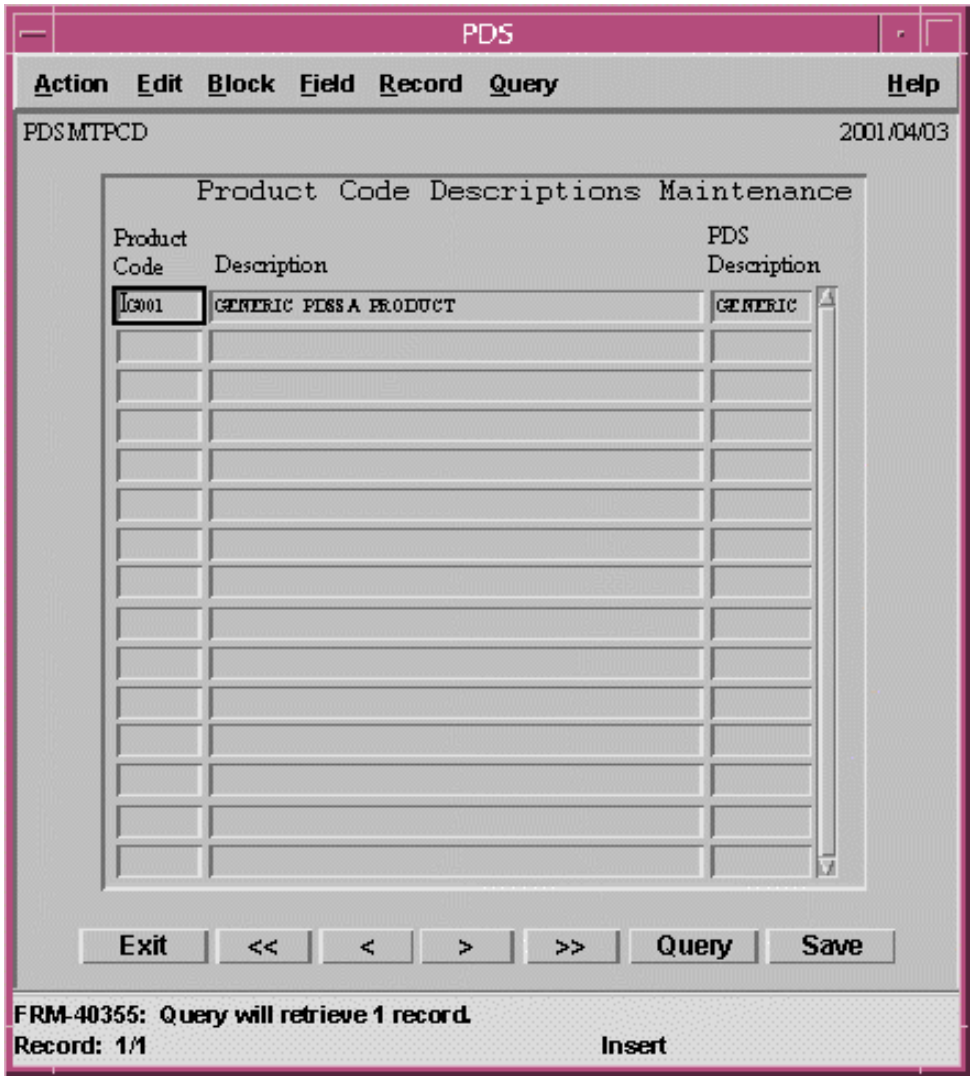
Troubleshooting PDS Problems (Cont.)

- **Determining Product Codes Using the PDS Maintenance Module: Procedure**
  - **Start the PDS Maintenance Module**
  - **Click on the Product Code Descriptions button**
  - **Click on the Execute Query button**
  - **Observe the data displayed on the Product Code Descriptions Maintenance Form to determine whether the relevant product code has appropriate values**
  - **Click on the Exit button at the bottom of the Product Code Descriptions Maintenance Form**
  - **Click on the Exit button at the bottom of the PDS Maintenance Module Main Menu window**

PDS Product Code Descriptions Maintenance Form (PDSMTPCD)



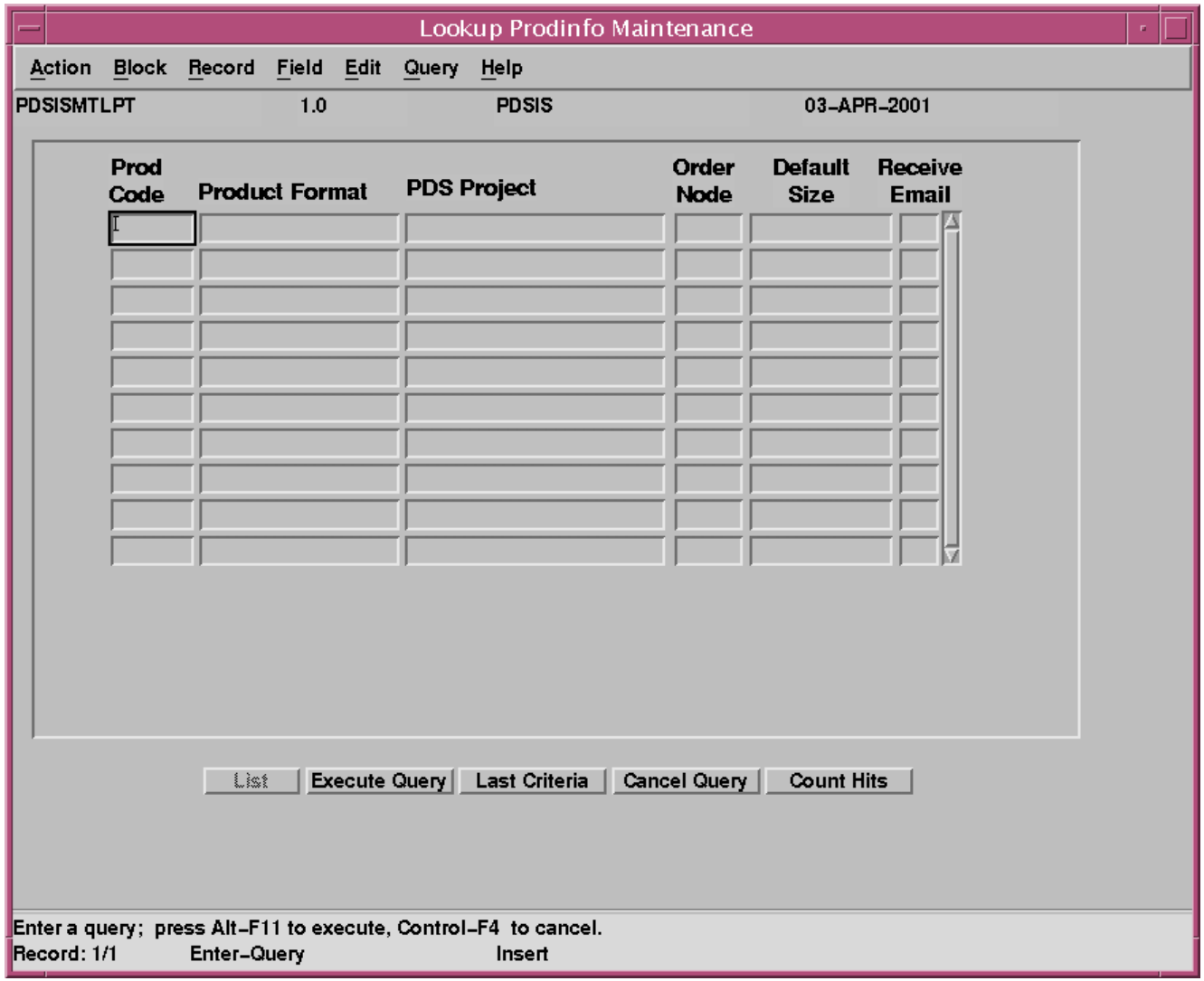
PDS Product Code Descriptions Form Displaying Product Code



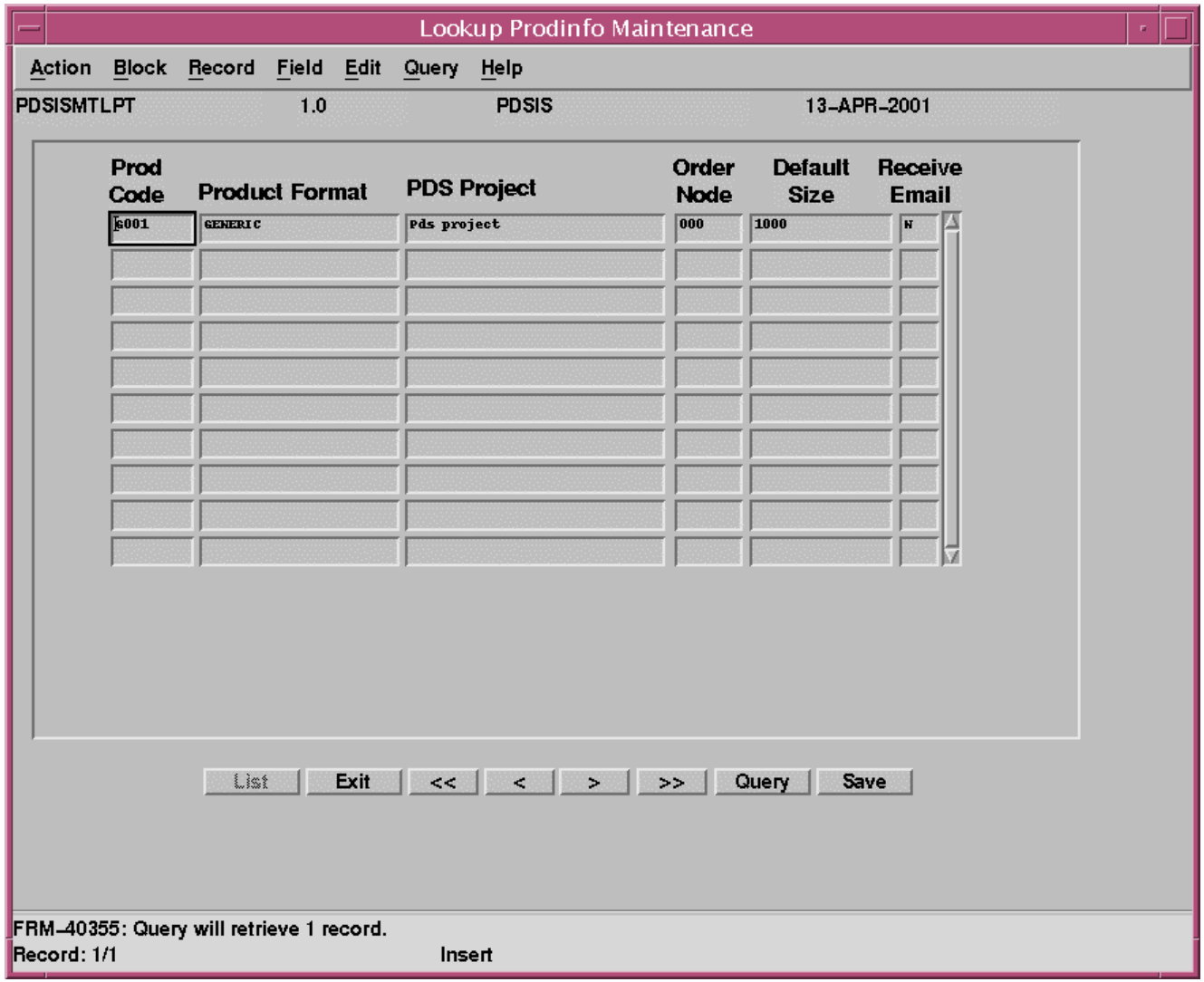
Troubleshooting PDS Problems (Cont.)

- **Determining Product Codes Using the PDSIS Maintenance Module: Procedure**
  - **Start the PDSIS Maintenance Module**
  - **Click on the Prod Code Info button**
  - **Click on the Execute Query button**
  - **Observe the data displayed on the PDSIS Product Code Info Window to determine the relevant product code**
  - **Click on the Exit button at the bottom of the PDSIS Product Code Info Window**
  - **Click on the Exit button at the bottom of the PDSIS Maintenance Module Main Menu window**

PDSIS Maintenance Module: Product Code Info Window



PDSIS Product Code Info Window Displaying Product Code



Troubleshooting PDS Problems (Cont.)

- **Determining the Status of PDS Tape/Disk Drives: Procedure**
  - **Access a terminal window logged in to the PDS Server host**
  - **Type tpstat then press the Return/Enter key**
  - **Type mt –f *device* status then press Return/Enter to determine the current status of a device**
  - **Type mt –f *device* help then press Return/Enter to determine other commands available for manual tape control:**
    - » **erase**
    - » **offline**
    - » **rewind**
    - » **unload**

Troubleshooting PDS Problems (Cont.)

- **Determining Which Instance of PDSOI Was Used to Activate a Job**
  - **Purpose**
    - » **Identify the instance of the PDSOI that can be used for completing the job**
  - **The instance is important because each activated job's status file name starts with the OI ID (which identifies the PDSOI instance)**
    - » **Only an instance of the PDSOI with that OI ID can change the job's status to "QC-Hold" after the production module has sent the job's status file to the "status" subdirectory**
    - » **Typically the procedure for determining which instance of PDSOI was used to activate a job is performed while trying to determine why a PDS job does not change to a QC-Hold status although production was successful**

Troubleshooting PDS Problems (Cont.)

- **Determining Which Instance of PDSOI Was Used to Activate a Job (Cont.)**
  - **At least two sources of information for determining which instance of PDSOI was used to activate a job:**
    - » **Name of the status file for the job**
    - » **Contents of the PPF for the job**
- **Determining Which Instance of PDSOI Was Used to Activate a Job: Procedure**
  - **Access a terminal window logged in to the PDS Server host**
  - **Change the current directory to the "status" directory**
  - **Request a listing of the subdirectories and files in the current directory**

Troubleshooting PDS Problems (Cont.)

- **Determining Which Instance of PDSOI Was Used to Activate a Job: Procedure (Cont.)**
  - **If there is a status file for the job (and if applicable), return to the appropriate step of the procedure for Responding to a Job's Status Not Changing to QC-Hold Upon Successful Completion**
  - **If there is no status file for the job in the status directory, change to the "summary" directory**
  - **If there is no status file for the job in either the status directory or the summary directory, type pg *PPF_filename* then press Return/Enter**
  - **Observe the entries in the PPF to determine the OI ID of the PDSOI instance that initiated the job**
  - **Return to the appropriate step of the procedure for Responding to a Job's Status Not Changing to QC-Hold Upon Successful Completion (if applicable)**

Troubleshooting PDS Problems (Cont.)

- **Forcing AutoRimage Completion**
  - The PDS Job Monitor provides a means of forcing AutoRimage completion
  - Forcing AutoRimage completion results in a signal being sent to the job telling it to stop waiting needlessly and complete processing
    - » This is useful when a number of jobs are queued for a Rimage, but the waiting job has produced the media and is waiting needlessly
- **Forcing AutoRimage Completion: Procedure**
  - Place the mouse cursor on the relevant job in the running job list of the Job Monitor Main Window and click and hold the right mouse button
  - Select Force AutoRimage Completion from the pop-up menu
  - Click on the Yes button in the dialogue box

Troubleshooting PDS Problems (Cont.)

- **Reactivating Units: Procedure**
  - In the PDSINFO Work Table reset the Status field value for all affected units to Q (pending)
  - In the PDSINFO Jobs Table reset the Status field value for the job to Q (pending)
  - Reactivate the job using the Main OI Screen
    - » The units may not be displayed immediately on the PDSOI; however, they should appear on the Main OI Screen within 15 to 30 minutes

Troubleshooting PDS Problems (Cont.)

- **Reprinting a Label Stamped on a Disk: Procedure**
  - Clean any ink from the disk with a cloth and alcohol-based cleaner
  - On the Rimage PC double-click on the Label Editor icon on the Windows desktop
  - Select File → Open from the pull-down menu in the Label Editor window
  - Select the appropriate drive (e.g., C:) in the Open window
  - Click on the icon for reprint.lab in the list of files in the Open window
  - Edit the file in the Label Editor window
  - Save (File → Save As) the edited template file as reprint.lab
  - Select File → Exit

Troubleshooting PDS Problems (Cont.)

- **Reprinting a Label Stamped on a Disk: Procedure (Cont.)**
  - Double-click on the CD-R Workstation icon on the Windows desktop
  - Click on Start
  - Click on Add
  - Select Print Labels Only
  - Click on Next
  - Click on Next again
  - Ensure that Rimage Label (No Merge Fields) is selected in the Label Type field
  - Click on Next again
  - Select Browse
  - Double-click on the icon for reprint.lab (file name of the label template created and saved)

Troubleshooting PDS Problems (Cont.)

- **Reprinting a Label Stamped on a Disk: Procedure (Cont.)**
  - **Place the CD that needs the label in the Rimage input bin**
  - **Click on Finish**
  - **When the label has been reprinted, select File → Exit**

Troubleshooting PDS Problems (Cont.)

- **Reprinting PDS Documents and Labels**
  - **The problem may be that PDSSA or PDSIS has failed to print one of the following items or one of the following items has been damaged, lost, or misprinted:**
    - » **Summary report**
    - » **Tape label**
    - » **Packing list**
    - » **Shipping label**

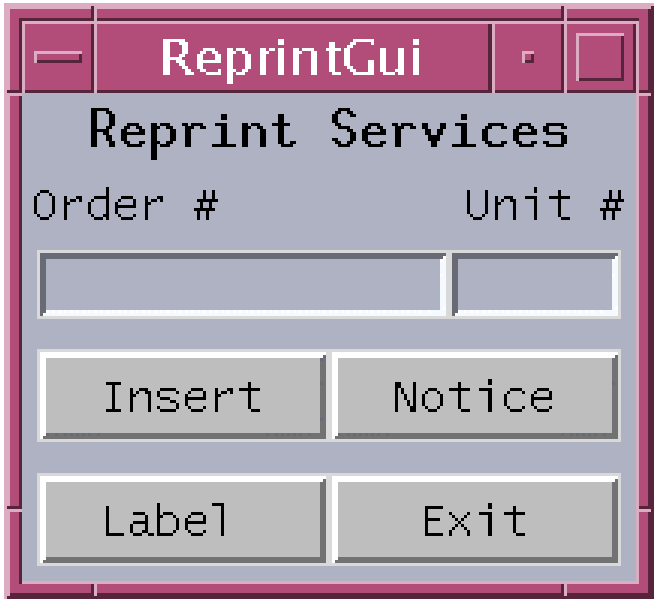
Troubleshooting PDS Problems (Cont.)

- **Reprinting PDS Documents and Labels (Cont.)**
  - **Packing lists and shipping labels can be reprinted using either the procedure for reprinting PDS documents and labels or the procedure for Changing the Values of Order Parameters Using the PDSIS Maintenance Module**
    - » **The PDSIS Orders Maintenance Form can be used to set the Action Code for the relevant order to "S"**
    - » **Both packing lists and shipping labels are printed in response to an "S" action code**
  - **To reprint a jewel-case insert go to the procedure for Responding to a Jewel-Case Insert Printing Failure**
  - **If a verification report is needed, rerun the verification**
    - » **Perform the procedure for Responding to a Status of QC-Hold (Performing a QC Check or Verification)**

Troubleshooting PDS Problems (Cont.)

- **Reprinting PDS Documents and Labels: Procedure**
  - Access a terminal window logged in to the PDS Server
  - At the UNIX command line prompt type cd then press the Return/Enter key
  - Type cd *path* then press Return/Enter
  - Type lp -d *printerID filename* then press Return/Enter
    - » An alternative command is lpr -P *printerID filename*
    - » TS20112020001_0001_1.lbl is a tape label for job TS20112020001_0001
    - » TS20112130001_0001.sum is the summary report for job TS20112130001_0001
    - » TS20112130001.lbl is the shipping label for order TS20112130001

Reprint GUI


ReprintGui
Reprint Services
Order #
Unit #
Insert
Notice
Label
Exit

Troubleshooting PDS Problems (Cont.)

- **Reprocessing a Job**
  - **In general jobs are reprocessed in response to one of the following problems:**
    - » **Processing of an order will not complete**
    - » **An error occurs during processing**
    - » **The medium does not pass verification**
  - **If a job is in an error status, it may be possible to reprocess the job by activating the job's units**
  - **If the job is not in an error status or if it has failed the QC check (and is in QC-Hold status), it will probably be necessary to perform the following actions:**
    - » **Remove (delete) the associated PPF, status file, and image files**
    - » **Reset the unit and job status to Pending**
    - » **Reactivate the job**

Troubleshooting PDS Problems (Cont.)

- **Reprocessing a Job: Procedure**
  - **If the job is an 8mm job, check the job log to determine whether there was an I/O error**
  - **If the job log indicated an I/O (input/output) error, turn the power switch for the affected 8mm drive off then on**
  - **If the job is in an Error status, reactivate units in the job**
    - » **Access a terminal window logged in to the PDS Server**
    - » **Change to the PDS root directory**
    - » **List the subdirectories and files in the PDS root directory**
    - » **Remove job's PPF file from the directory**
    - » **Remove job's status file from the directory**
    - » **Change to the assemble directory**

Troubleshooting PDS Problems (Cont.)

- **Reprocessing a Job: Procedure (Cont.)**
  - **If the job is in an Error status, reactivate units in the job (Cont.)**
    - » **Remove job's directory (*order#_unit#*)**
    - » **Remove the job's image data from the directory if necessary**
    - » **Change the status of the job and its units to Q (Pending) and reactivate the units/job (procedure for Reactivating Units)**
  - **Monitor job processing**

Troubleshooting PDS Problems (Cont.)

- **Resetting an Order or a Unit: Procedure**

  NOTE: A PDSIS user ID (e.g., pdsis, pdsis_ts1, pdsis_ts2) is used in this procedure.

  – **Log in to the PDS Server host using the appropriate PDSIS user ID for the operating mode being used**

  – **Change directory to the "utilities" directory**

  – **Enter EcPdPDSISResetOrder *MODE* orderId [unitID] &**

  – **Repeat the preceding step as necessary to reset additional order(s)/unit(s)**

Troubleshooting PDS Problems (Cont.)

- **Responding to a CD/DVD Job Error Indicated on PDSOI: Procedure**
  - **Access a terminal window logged in to the PDS Server**
  - **Change to the /pdssa/rimage_jobcontrol directory**
  - **Display the content of pwrtool.log**
  - **Examine the content of the PowerTools log for “File already exists” or “File not found”**
  - **If one of the problems is found in the PowerTools log, perform the procedure for Cleaning up the CD-R_Images Folder on the Rimage**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Jewel-Case Insert Printing Failure**
  - **The problem is that a jewel-case insert has failed to print and the following circumstances exist:**
    - **Data have been written to the medium**
    - **Status has changed to QC-Hold**
    - **Summary sheet has printed**
    - **There are no obvious printer faults (e.g., paper supply empty, paper jam)**
    - **Jewel-case insert has not printed**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Jewel-Case Insert Printing Failure: Procedure**
  - **Access a terminal window logged in to the PDS Server host**
  - **Change to the "summary" directory**
  - **List the subdirectories and files in the "summary" directory**
  - **Observe the entries in the list to identify the status file for the job**
  - **If reprinting all jewel-case inserts for a multiple CD/DVD job, enter mv *statusfilename* ../status**
  - **If the printer still does not provide output or if reprinting an individual jewel-case insert, enter lp -d *printerID insertfilename***
  - **If the specified file did not print on the printer, call the help desk and submit a trouble ticket**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Job's Status Not Changing to QC-Hold Although Production is Successful**
  - **The problem is that a PDS job does not change to a QC-Hold status although production was successful**
  - **Possible causes include the following items:**
    - » **At least two instances of PDSOI with the same OI ID are currently active**
    - » **The instance of PDSOI with the OI ID that activated the job is not currently active**
    - » **The time on the Rimage PC is not set to within five minutes of the time on the PDS Server host (CD or DVD job only)**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Job's Status Not Changing to QC-Hold Although Production is Successful: Procedure**
  - **Review the job log to verify that production of the affected job was in fact successful**
  - **If job production was not successful, go to the procedure for Reprocessing a Job**
  - **If the affected job is a CD or DVD job, check the synchronization of the Rimage PC time with PDS system time**
  - **If the affected job is not a CD or DVD job or if checking/restoring synchronization of the Rimage PC time with PDS system time is not effective, determine which instance of PDSOI was used to activate the job**
  - **Access a terminal window logged in to the PDS Server host**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Job's Status Not Changing to QC-Hold Although Production is Successful: Procedure (Cont.)**
  - **At the UNIX command line prompt type ps -ef | grep PDSMTOIX then press Return/Enter**
  - **If there are any active instances of PDSOI currently running, observe the header of each Main OI Screen to identify the OI ID that applies to each**
  - **If there are multiple instances of PDSOI currently running with what should be the single controlling OI ID on each instance of the GUI, shut down all but one instance of the PDSOI with that OI ID**
  - **If there is no current instance of PDSOI with the OI ID indicated in the status file name or .ppf contents, start another PDSOI using the specified OI ID**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Job's Status Not Changing to QC-Hold Although Production is Successful: Procedure (Cont.)**
  - **Change the values of the following job parameters using the PDS Maintenance Module:**
    - » **PDSINFO Work Table: change the Status of each unit in the job to F**
    - » **PDSINFO Jobs Table: change the Status of the job to F**
  - **If the Job Status for the job (on the PDSOI Main OI Screen) has changed to QC-Hold, perform the QC check**
  - **If the Job Status for the job (on the PDSOI Main OI Screen) has not changed to QC-Hold, reprocess the job**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Job on a Lag Report: Procedure**
  - **Start the PDS Maintenance Module**
  - **Observe the data in all of the various fields on the PDSINFO Work Table to determine whether there is missing data in any field for the job, especially in the Product Code and Output Specs fields**
  - **If there is missing or incorrect data in any field, enter the appropriate value in the field**
  - **Repeat for all records that need to be modified for the job**
  - **Determine whether there are appropriate entries in the PVT_PRCDTBL_TBL database table for Product Code**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Job on a Lag Report: Procedure (Cont.)**
  - **Determine whether there are appropriate entries in the OUT_OTSPTBLV_TBL database table for Output Specs**
  - **Perform the procedure for Specifying Job Selection Criteria, ensuring that the specified criteria include the values for the job on the lag report**
  - **Observe information displayed on the Main OI Screen**
    - » **The job on the lag report should be displayed on the Main OI Screen**
  - **If the job on the lag report is still not displayed on the Main OI Screen, call the help desk and submit a trouble ticket in accordance with site Problem Management policy**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Locked-Up Screen: Procedure**
  - **In the UNIX window where the PDSOI was originally started enter ps -ef | grep PDSMTOIX**
  - **Enter kill -15 *processID***

Troubleshooting PDS Problems (Cont.)

- **Responding to a Problem Starting PDSOI: Procedure**
  - **Wait a few seconds for the PDSOI to be displayed**
  - **If the PDSOI is not displayed after a few seconds, determine whether the DISPLAY environmental variable was set properly**
  - **If the DISPLAY environmental variable was not set properly, set the DISPLAY environmental variable**
  - **Perform the procedure for Starting the PDS Operator Interface (PDSOI)**
  - **If the DISPLAY environmental variable was set properly, determine whether the alias pdsoi is set properly**
  - **If the DISPLAY environmental variable was not set properly, set it**

Troubleshooting PDS Problems (Cont.)

- **Responding to a Save Changes Dialogue Box When Exiting a Maintenance Module Window: Procedure**
  - **Click on the Yes button to accept the changes and dismiss the dialogue box and maintenance module window or click on the No button to dismiss the dialogue box and maintenance module window without accepting the changes made to the data on the form**
  - **If changes should be saved but it is not possible to save changes and get out of the maintenance module window (if the dialogue does not accept Yes as a response), call the help desk and submit a trouble ticket in accordance with site Problem Management policy**

Troubleshooting PDS Problems (Cont.)

- **Responding to a "Waiting for Drive Selection" Message on the Job Monitor: Procedure**
  - **Minimize other windows in the workspace and see if the Media Drive Selection window was hidden behind another window**
  - **If the Media Drive Selection window is visible in the workspace, go to Step 4 of the procedure for Activating a Job**
  - **If the Media Drive Selection window is not visible anywhere in the workspace, access a terminal window logged in to the PDS Server host**
  - **Change to the $PDSROOT/run directory**
  - **Enter genericout *job_key***
  - **If the Media Drive Selection window is visible in the workspace, go to Step 4 of the procedure for Activating a Job**

Troubleshooting PDS Problems (Cont.)

- **Responding to Duplicate Jobs on the PDSOI: Procedure**
  - **Observe the job keys of the "duplicate" jobs on the Main OI Screen to verify that the jobs are true duplicates**
  - **Use the PDS Maintenance Module PDSINFO Jobs Table to determine whether any field has data that differ from preceding records, determine which record is the correct one**
  - **Repeat for all records with the same job key in the PDSINFO Jobs Table**
  - **If any field has data that differ from preceding records, determine which record is the correct one**
  - **Delete all incorrect records (select Record → Remove from the pull-down menu)**

Troubleshooting PDS Problems (Cont.)

- **Responding to Duplicate Jobs on the PDSOI: Procedure (Cont.)**
  - **If the OI ID specified in the PDSINFO Jobs Table is different from the OI ID used in starting the current PDSOI, start another PDSOI using the OI ID specified in the PDSINFO Jobs Table**
  - **Process the job using the newly started PDSOI**
  - **If the values of any parameters on the PDSINFO Work Table are inconsistent with the values in the fields on the PDSINFO Jobs Table, enter the appropriate values in the PDSINFO Work Table**
  - **Repeat for all records for the job**
  - **If the PDSOI continues to create duplicate jobs, use the PDS Maintenance Module to change the values of job parameters that have blank or invalid values and remove duplicate records**

Troubleshooting PDS Problems (Cont.)

- **Responding to Low Disk Space**
  - If disk space becomes low it should be noticeable in the Assembly Disk Usage section of the Job Monitor Main Window
- **Responding to Low Disk Space: Procedure**
  - Wait before activating any jobs that would use the disk resource and perform the steps that follow
  - Complete orders that are being processed
  - Access a terminal window logged in to the PDS Server host
  - Change to the /pdssa/assemble directory
  - List subdirectories and files in the /pdssa/assemble directory
  - Remove unneeded data (files or subdirectories) from the directory

Troubleshooting PDS Problems (Cont.)

- **Responding to No Printouts (Either Jewel-Case Inserts or Paper Reports): Procedure**
  - **Observe the printer to determine whether there are any obvious faults (e.g., power off, paper supply empty, paper jam)**
  - **Respond to obvious faults, if any**
  - **If the jewel-case printer is affected and the printer displays a "Wrong Media in Multi-Purpose Tray" message, reset the printer settings**
  - **Click on Printers on the menu bar of the Main OI Screen**
  - **If no printer is selected for either Report Printer or Jewel-Case Insert Printer, select the appropriate printer(s)**
  - **If either printer still does not provide output, access a terminal window logged in to the PDS Server host**

Troubleshooting PDS Problems (Cont.)

- **Responding to No Printouts (Either Jewel-Case Inserts or Paper Reports): Procedure (Cont.)**
  - **At the UNIX command line prompt enter lp -d *printerID filename***
    - » **For example:**
    - » **lp -d x0dih04 0000104030361_0001.ppf**
  - **If the specified file did not print, call the help desk and submit a trouble ticket in accordance with site Problem Management policy**
  - **If the test file did print on the printer and it is the jewel-case printer that is affected, examine the job log for an entry indicating that the job has stalled while waiting for status from Rimage**
  - **If the job has stalled while waiting for status from Rimage, check the NFS connection**

Troubleshooting PDS Problems (Cont.)

- **Responding to No Printouts (Either Jewel-Case Inserts or Paper Reports): Procedure (Cont.)**
  - **If the NFS connection is good or if the job does not go to completion after the NFS connection has been restored, check synchronization of the Rimage PC time with the PDS system time**
  - **If the problem has not been resolved through any of the preceding actions, call the help desk and submit a trouble ticket in accordance with site Problem Management policy**

Troubleshooting PDS Problems (Cont.)

- **Responding to PDSOI's Failure to Update Status: Procedure**
  - Access a terminal window logged in to the PDS Server host
  - List the subdirectories and files in the “status” directory
  - Identify the status file for the job in the list of subdirectories and files in the “status” directory
  - If there is no status file for the job, go to the procedure for Responding to a Job’s Status Not Changing to QC-Hold Although Production is Successful
  - If there is no current instance of PDSOI with the OI ID included in the status file name, start another PDSOI using the specified OI ID
  - Process the job using the PDSOI started using the OI ID specified in the status file name

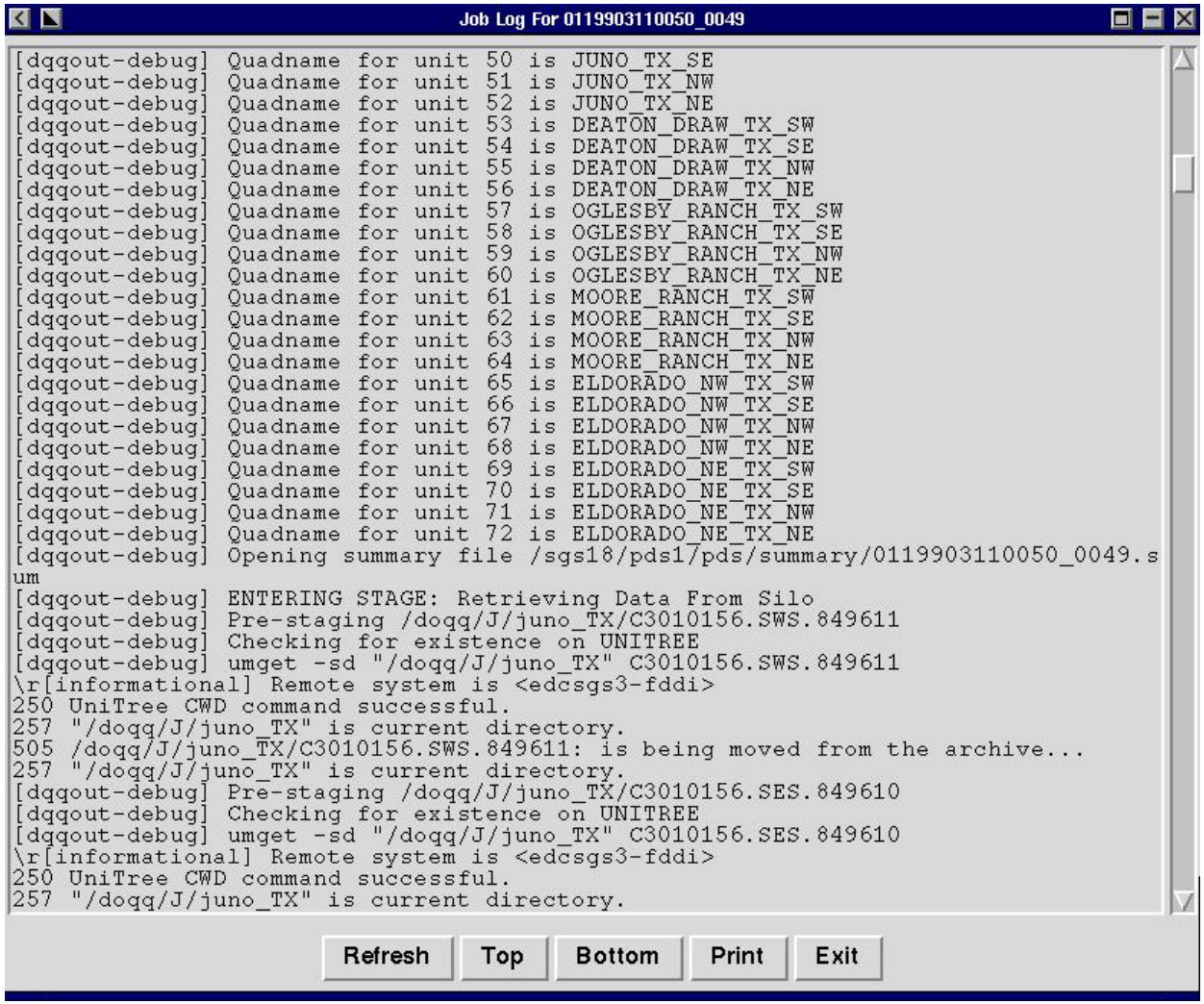
Troubleshooting PDS Problems (Cont.)

- **Viewing a Job Log or Job Production Parameter File (PPF) Using UNIX Commands**
  - **If the PDS Job Monitor is not available, UNIX commands can be used to gain access to a log file or job Production Parameter File (PPF)**
- **Viewing a Job Log or Job Production Parameter File (PPF) Using UNIX Commands: Procedure**
  - **Access a terminal window logged in to PDS Server**
  - **Change directory to the PDS root directory, which contains the PPF files for the jobs being processed**
  - **If a job log is to be viewed, change directory to the "summary" directory, which contains the log files**
  - **Type pg *filename* then press Return/Enter**
  - **Review the PPF or log**

Troubleshooting PDS Problems (Cont.)

- **Viewing a Job Log Using the PDS Job Monitor**
  - The PDS Job Monitor provides a relatively easy means of gaining access to the log for a particular job
- **Viewing a Job Log Using the PDS Job Monitor: Procedure**
  - Place the mouse cursor on the relevant job in the running job list of the Job Monitor Main Window and click and hold the right mouse button
  - Select View Job Log from the pop-up menu
  - Review the log
  - To exit from the log click on the Exit button at the bottom of the window

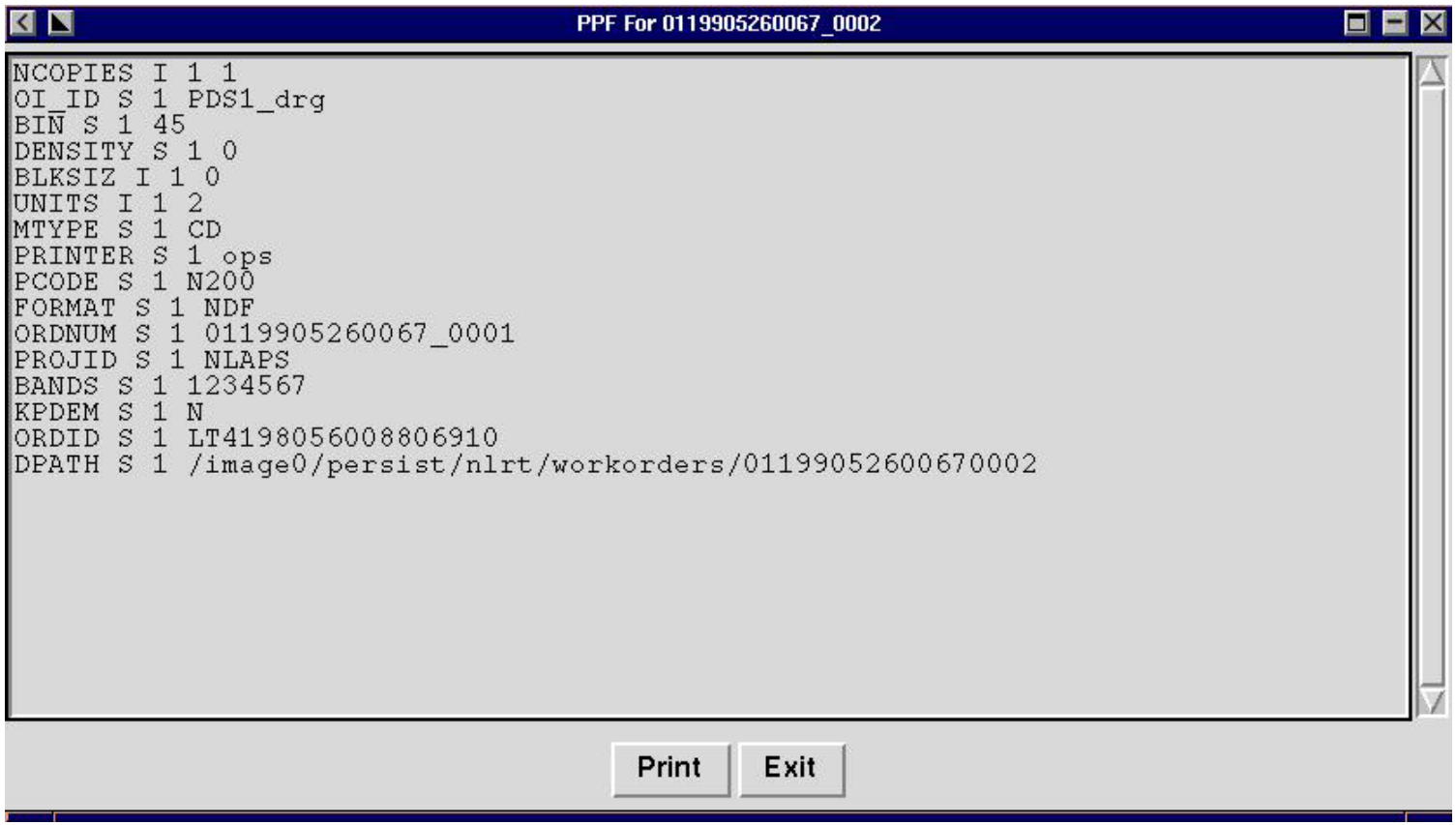
PDS Job Log


Job Log For 0119903110050_0049
[dqqout-debug] Quadname for unit 50 is JUNO_TX_SE
[dqqout-debug] Quadname for unit 51 is JUNO_TX_NW
[dqqout-debug] Quadname for unit 52 is JUNO_TX_NE
[dqqout-debug] Quadname for unit 53 is DEATON_DRAW_TX_SW
[dqqout-debug] Quadname for unit 54 is DEATON_DRAW_TX_SE
[dqqout-debug] Quadname for unit 55 is DEATON_DRAW_TX_NW
[dqqout-debug] Quadname for unit 56 is DEATON_DRAW_TX_NE
[dqqout-debug] Quadname for unit 57 is OGLESBY_RANCH_TX_SW
[dqqout-debug] Quadname for unit 58 is OGLESBY_RANCH_TX_SE
[dqqout-debug] Quadname for unit 59 is OGLESBY_RANCH_TX_NW
[dqqout-debug] Quadname for unit 60 is OGLESBY_RANCH_TX_NE
[dqqout-debug] Quadname for unit 61 is MOORE_RANCH_TX_SW
[dqqout-debug] Quadname for unit 62 is MOORE_RANCH_TX_SE
[dqqout-debug] Quadname for unit 63 is MOORE_RANCH_TX_NW
[dqqout-debug] Quadname for unit 64 is MOORE_RANCH_TX_NE
[dqqout-debug] Quadname for unit 65 is ELDORADO_NW_TX_SW
[dqqout-debug] Quadname for unit 66 is ELDORADO_NW_TX_SE
[dqqout-debug] Quadname for unit 67 is ELDORADO_NW_TX_NW
[dqqout-debug] Quadname for unit 68 is ELDORADO_NW_TX_NE
[dqqout-debug] Quadname for unit 69 is ELDORADO_NE_TX_SW
[dqqout-debug] Quadname for unit 70 is ELDORADO_NE_TX_SE
[dqqout-debug] Quadname for unit 71 is ELDORADO_NE_TX_NW
[dqqout-debug] Quadname for unit 72 is ELDORADO_NE_TX_NE
[dqqout-debug] Opening summary file /sgs18/pds1/pds/summary/0119903110050_0049.sum
[dqqout-debug] ENTERING STAGE: Retrieving Data From Silo
[dqqout-debug] Pre-staging /doqq/J/juno_TX/C3010156.SWS.849611
[dqqout-debug] Checking for existence on UNITREE
[dqqout-debug] umget -sd "/doqq/J/juno_TX" C3010156.SWS.849611
\r[informational] Remote system is <edcsgs3-fddi>
250 UniTree CWD command successful.
257 "/doqq/J/juno_TX" is current directory.
505 /doqq/J/juno_TX/C3010156.SWS.849611: is being moved from the archive...
257 "/doqq/J/juno_TX" is current directory.
[dqqout-debug] Pre-staging /doqq/J/juno_TX/C3010156.SES.849610
[dqqout-debug] Checking for existence on UNITREE
[dqqout-debug] umget -sd "/doqq/J/juno_TX" C3010156.SES.849610
\r[informational] Remote system is <edcsgs3-fddi>
250 UniTree CWD command successful.
257 "/doqq/J/juno_TX" is current directory.
Refresh
Top
Bottom
Print
Exit

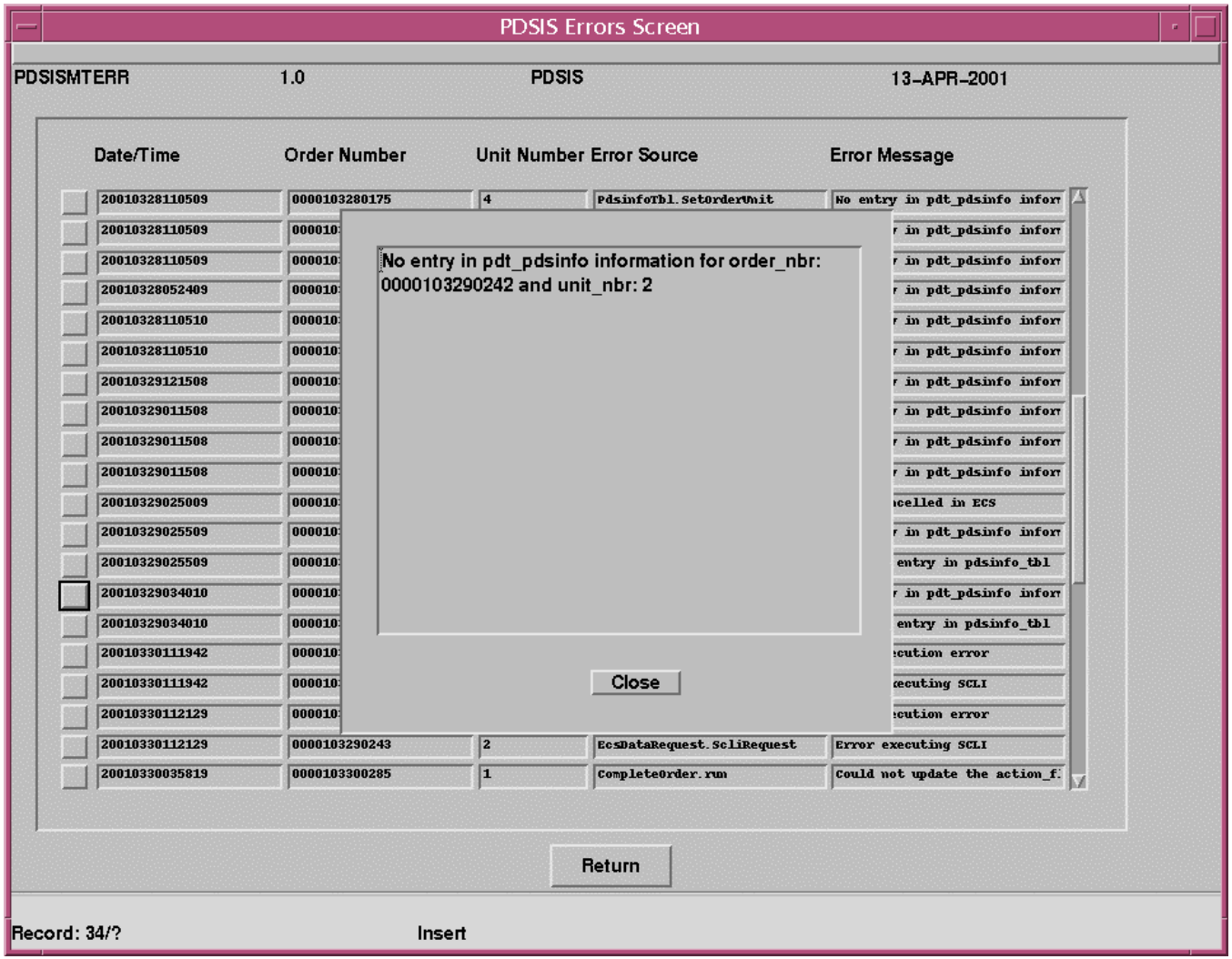
Troubleshooting PDS Problems (Cont.)

- **Viewing a Job Production Parameter File (PPF) Using the PDS Job Monitor**
  - The PDS Job Monitor provides a relatively easy means of gaining access to the PPF for a job
  - The PPF specifies all of the information that the job needs to run (e.g., the media type, data path, bin number, etc.)
- **Viewing a Job Production Parameter File (PPF) Using the PDS Job Monitor: Procedure**
  - Place the mouse cursor on the relevant job in the running job list of the Job Monitor Main Window and click and hold the right mouse button
  - Select View Job PPF from the pop-up menu
  - Review the PPF file
  - Click on the Exit button at the bottom of the window

PDS Job PPF Window



Troubleshooting PDS Problems (Cont.)

- **Viewing an Extended Error Message: Procedure**
  - **Click on the action button at the beginning of the relevant error status line**
  - **Select (highlight) Expanded Message in the Action List box**
  - **Click on the OK button**
  - **Observe information displayed on the extended message window**
  - **To return to the Checking/Clearing Errors on PDSIS procedure click on the Close button**

PDSIS Extended Error Message Window